ELEMENTARY COMMERCIAL GEOGRAPHY

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ELEMENTARY COMMERCIAL GEOGRAPHY

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PREFACE TO THE FIFTH EDITION

THIS edition retains the original arrangement based on the unchanging principles of Geography During thirty-five years almost everything else has had to be altered in successive editions and reprints, and this one has been so largely re-written in order to give effect to the reconstruction of political boundaries in the Treaty of Versailles that it is appropriately put forward as the work of joint authors

The political and economic upheaval in Europe and Asia between 1914 and 1919 has been so tremendous that it is still impossible to give an account of commercial geography as coherent and definite as was possible before the war, and in some cases positive error could only be avoided by deliberate vagueness We must therefore emphasize the importance of the teacher supplementing this book by reference to recent statistical and economic information, such as is given in the current volume of *The Statesman's Year Book.* In the rapid changes which are accompanying the rearrangement of the topsy-turvydom of Europe even the last annual record may be out of date, and the only way to be sure of actual conditions is by the intelligent reading of a newspaper which gives prominence to geographical conditions, such as *The Times,* the *Morning Post,* the *Daily Telegraph,* the *Scotsman,* the *Glasgow Herald* or the *Manchester Guardian* Abstracts of Consular Reports may always be trusted, the annual reports of great commercial companies often yield most valuable information, but the statements in the prospectuses of new companies should be taken only as optimistic anticipations

Although statistics of the productions and trade of the chief countries are given in the text for three years at ten-year intervals these are of full value for comparison only when quantities are specified Before the Great War the international exchanges were so nearly stable that it was

possible to give values of exports and imports of all countries in pounds sterling, now, however, the United States alone amongst the great countries retains a gold standard and only for it are statistics of value of exports and imports in or about 1920 strictly comparable with those for ten and twenty years before The credit of Great Britain is so high that no serious error is introduced in the comparison of the trade in consecutive periods, but in most other countries the great fall and irregular fluctuations in the exchange value of their paper money deprives the post-war figures (which are converted into pounds sterling on the pre-war basis) of comparative value In the case of the Central European States and Russia statistics of money values have for the present no meaning

It is taken for granted that anyone using this book is familiar with the general geography of Great Britain and Ireland and that a good general atlas is constantly at hand for reference

In the description of each country the names of towns with over 100,000 inhabitants are given in capitals, those of smaller towns in small capitals, and the population in thousands is added Numbers are printed in antique figures, e g 1,500,000, but when expressed as thousands in modern type, e g 1500 thousand, and as millions in heavy type, e g **1·5** millions

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1*st March* 1924.

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PART I

GENERAL PRINCIPLES OF COMMERCIAL GEOGRAPHY

CHAPTER I

INTRODUCTORY

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Commercial Geography is the description of the Earth's surface with special reference to the discovery, production, manufacture, transport and exchange of useful or desirable things It is geography applied to the purposes of commerce, and it describes the Earth in such a way as to bring into prominence everything which enables people to turn natural conditions to practical account Two entirely different kinds of preliminary study are necessary in order to understand the principles of Commercial Geography These are

Physiography, which includes the description of commodities as they exist naturally, their distribution over the world, the various natural conditions, such as climate and weather, that facilitate or hinder their transport, and the mechanical contrivances that apply natural agencies to their manufacture or improvement This gives an inventory of the world and its contents viewed as a vast workshop at rest, and without workmen, but containing the raw materials, machinery, and power all ready for use

Economics, or the principles of exchanging commodities, the use of money, the laws of supply and demand, the forms of government, and the regulations for the conduct of trade between nations This describes the rules which the workers in the great world-workshop must accept, if the various divisions are to work harmoniously and to the best result

Then *Commercial Geography*, or the description of the world in its relation to man as a trader, can be really understood It describes and explains the natural divisions and artificial boundaries of countries, the distribution of popu-

lation, towns with their special industries, and the laws, manners and customs of the people In fact it pictures the actual condition of the world-workshop, showing what stores of raw material are being utilised, the amount of work done in each part, and the way in which the different workmen act, either following, neglecting or transgressing the rules of the establishment

While it is possible to pick up enough knowledge of the two branches of preliminary study by paying attention to the facts of Commercial Geography as they are described for each country, it is absolutely necessary to possess a sound groundwork of general geography, and to go through the drudgery of learning the exact positions of countries, with their boundaries, and the positions and distances apart of the chief towns Maps must be thoroughly understood, and the student of geography should learn to read a map as readily as a book The Atlas of Commercial Geography in this series has been specially designed to illustrate this book and should be used along with it

The mathematical facts of geography are fixed, unalterable and fundamental, they may often be studied better from old text-books than from new ones The physical facts of geography change so slowly as to be permanent when measured by the term of human life, but they are not yet fully investigated, so that new research continues to be rewarded by fresh discoveries Political geography, dealing with changes of boundaries and of laws, alters more rapidly, and on this account text-books soon pass out of date unless frequently revised, but the practical aspects of Commercial Geography change more rapidly still, hence every definite statement as to commercial conditions should be fixed by a date In endeavouring to find the reason for the facts of Commercial Geography a great many different factors have to be considered In some instances the reasons may easily be found, for example we may take the case of copper Much ore of this metal is mined in the Andes of Chile, it is partly separated from other things with which it is combined and then shipped to Swansea in Wales, where the metal is extracted and purified It may then be sent to Birmingham, and used in the construction of a steam-engine which, when finished, is possibly sent out to Chile again to haul ore at the very mine whence the material had been raised A thoughtful consideration of the facts of Commercial Geography explains why the ore is taken not from the mines of Cornwall but from those of Chile, why it is smelted at Swansea, and manufactured at Birmingham, why the Chilians do not extract the copper from their ore and

work it into a steam-engine themselves when they want one, and why, when they have to buy an engine, they order it from Britain, not the United States In many instances, however, the reason for industries being centred in particular towns does not appear until the commercial history of the locality has been studied for example the great jute manufacture in Dundee, which is one of the most distant seaports of the United Kingdom from the source of raw material In this book the historical aspect of Commercial Geography has necessarily been kept in the background in order to give space to the chief facts as to the present state of things, and it is possible only to refer to its importance here The history of commerce is of itself a very useful and interesting study, explaining the changes which have taken place in the staple products of different countries and in the sources of commodities

Natural Conditions The circumstances which affect the commercial importance of a region are its position, configuration, climate, natural resources and people A country which by its **position** is easily accessible from all parts of the inhabited world, which has numerous inlets of the coast to form harbours, is well adapted for commerce These con ditions are only found together in islands, such as Great Britain, or Japan, with deeply indented shores giving a long coast-line Facility of defence is another important condition, though the invention of aircraft has gone far towards making all countries equally accessible to determined enemies Still islands, mountain valleys like those of Switzerland, or shallow sea-coasts like those of Denmark and Germany are less open to invasion than long land frontiers such as separate the countries of eastern Europe The **configuration** of a country, i e the form and arrangement of its mountains, valleys, high and low lands, determine the size and directions of its rivers, and the value of its soil for cultivation It also fixes the main lines of communication along which roads or railways may be made The short rapid streams and barren mountains of northern Scotland, for example, and the slow, barge-bearing rivers and rich flat wheat-lands of eastern England owe their commercial character mainly to configuration **Climate** depends on position and configuration Temperature of the air is subject to greater extremes and the rainfall is less in the heart of a continent than near the sea Summer in Britain, and still more in

Ireland, is far cooler than in Russia in the same latitude, but in the latter country the rivers and most seaports are closed for months in winter by ice, while those of the Atlantic coast of Europe are always kept open by the influence of the comparatively warm sea water

The natural resources of a country are mainly the mineral commodities, the water-power and agricultural produce that it yields With the constant demand for machinery and fuel, the possession of oil, coal and iron secures the commercial success of any region A discovery of gold, silver or diamonds often brings a rush of people to a barren and difficultly accessible district while the precious deposits last railways are made and towns are built If the soil is improved for agriculture, and the settlement of others besides miners is encouraged, the result, when the precious product is exhausted, may be a self-supporting settlement permanently established and in full communication with the world The position and industries of towns are usually fixed by the existence of natural resources or of natural lines of communication, but the most powerful agent is the personal energy of enterprising and persevering men, who by superior education, or scientific knowledge, or practical foresight, have often been able to found towns and industries in situations which no theoretical considerations would suggest or explain

Commerce arises from the division of labour among men, and the difference in the productions of various parts of the Earth In its simplest form, that of barter, one man spends his time in collecting or making a quantity of some one necessary thing, he keeps as much as he wants for himself, and takes the rest to another person who has occupied himself in collecting or making something else equally necessary, the two exchange their surplus commodities and each gains an equal advantage

Money As society became more complex it was convenient to have some symbol of value that could be easily kept and carried, and would be readily accepted in exchange for anything useful This symbol of value in different countries takes the form of cowrie shells, kola-nuts, mats, cloth, brass wire, bricks of tea, or metal coins, in all civilised countries it is nominally gold or silver, all values being reckoned in terms of these metals In commerce it is convenient and in times of political stringency often necessary to make use of written or printed promises to pay (bills or

notes) instead of money In primitive society each man caught or cultivated all he required for living, unless he took it from some weaker person who had done so As civilisation progresses, robbery is not encouraged, the number of desirable things increases rapidly, and it becomes necessary to seek for commodities in far-off lands and carry them long distances Ingenuity strengthened by exercise invents new means of manufacture and communication, and advantage is taken of natural phenonema like the trade winds, or contrivances like the heat-engine, in order to gain increased speed and security Laws are framed and treaties made to regulate conduct in matters where the wishes of one man or state might otherwise lead to actions hurtful to the community or to other countries

Trade The current of trade naturally tends to flow from places where there is an abundant **supply** of any commodity to those where there is a lack and a **demand** Thus more wheat is grown in America than can be eaten, and more is eaten in Britain than can be grown; so wheat-laden ships are always crossing the Atlantic from west to east The amount of trade in any commodity may be measured in two ways, either by taking account of the *quantity* or of the *value* which changes hands These often give different results, for example four times as much cotton was exported from the United States in 1890 as in 1866, yet because of the fall in price which occurred the value in 1890 was 12 per cent less than in 1866 As a rule in this book the amounts are stated by quantity when speaking of commodities and by value when speaking of the total trade of countries The *natural barriers* to the flow of trade, such as seas and mountains, have been successfully overcome, but *artificial barriers* of a much more serious kind exist in the shape of **tariffs** In Great Britain alone the **free trade** system prevails, with a few exceptions all goods are allowed to enter or leave the country, wherever they come from or wherever they go to, without charge Practically all other countries follow the older system of **protection** The protective tariff is a tax on the imports, levied on all foreign commodities which might have been produced in the country Under it manufacturers

are generally allowed to import raw material free of duty, or at a low rate, but the public must pay dearly for the manufactures, as the cheaper imported goods are raised by the tax to even a higher price than the home productions The **prohibitive** system consists in absolutely preventing the import or export of certain commodities, but although once common it is now rarely applied on a large scale, except in the case of the United States and certain parts of Africa and the Pacific islands where the import of alcohol is prohibited A necessary accompaniment of this system is the development of a highly organized system of smuggling or bringing the prohibited goods into the country surreptitiously

Trade Restrictions Besides the ever-varying tariff systems of the world, trade is subject to a variety of restrictions Most Governments have certain **monopolies** such as letter-carrying, railways, tobacco, matches or opium growing, with which private firms are not allowed to compete Powerful financiers may combine to secure the complete control of some industry or branch of trade so as to put a stop to competition and fix the prices which the public must pay Workmen on the other hand may institute conditions supported by trade unions which limit the amount of work done or exact special terms of payment These demands may be enforced by strikes or the withholding of labour which may be combated by lock-outs or the withholding of work on the part of federated employers All these things disturb the normal course of trade, but **war** is a far more disastrous and less rational hindrance than any The world is now so interwoven with the bonds of commerce that the result of a rupture anywhere disorganises the whole The Great War of 1914—18 not only resulted in the premature deaths of many million young men, but shattered the trade of the whole world Even in time of peace the possibility of an outbreak of war causes great inconveniences The State railways of the Continent are liable on a rumour of war to be closed to commerce, towns must be fortified, hindering their natural growth, in most countries every young man must give up several years to military service, and in every land heavy taxation is necessary to maintain the army and defences

CHAPTER II

MINERAL COMMODITIES

Distribution, production and uses of Gold, Silver, Mercury, Iron ores, Pig-iron, Copper, Tin, Lead, Zinc, Platinum, Nickel, Aluminium, Manganese, Chromium, Tungsten, Sulphur, Graphite, Diamond, Salt, Mineral Waters, Nitrate, Borax, Phosphates, Asbestos Building materials Mineral fuel—peat, lignite, coal and anthracite Coal mining Shale, Petroleum, Petrol, Natural Gas, Asphalt Calcium Carbide Carborundum Gas mantles Utilisation of Resources

Mineral Commodities are those which occur in the substance of the Earth itself or on the surface of the ground, and have not been recently produced by the action of life Although the globe is composed of ninety-two different kinds of matter or elements, only about twenty of them, either pure or combined together in various ways by twos or threes, are of great practical use All commodities are obtained within a mile of the surface of the ground, mines become warmer so rapidly as they go deeper that if they could be sunk to a depth of about two miles the air would be as hot as boiling water

The different kinds of rocks formed during the ages of the past have been laid down in great sheets one over another in orderly succession The crust of the Earth is, however, always rising slowly in some places, and sinking in others, while wind, rain, ice, running water, and waves are continually grinding down and carrying away the land, and gradually forming new rocks in lakes and seas The coal measures, for instance, were originally spread like a sheet over great tracts of older rocks, and then covered deeply by newer deposits, so that they could never be reached by human power In the north of England, to take a particular case, all these layers of rock have been bent up in an arch forming the Pennine Hills, and the crest of this has been worn away until the coal measures have been exposed and then completely removed, but on each slope of the ridge coal is found at or near the surface, and thus there are coal-fields in Yorkshire and Lancashire A valley is sometimes cut out by a river through the successive layers of rock, which can then be reached on both sides of the gorge By studying the order of the changes which the Earth's surface undergoes, and the nature of the surrounding country, a geologist is able to tell where valuable deposits are likely to be found, and where it would only be waste of money to look for them

Metals are sometimes found in the pure or native state, but more often in combination with sulphur, oxygen, or other elements **Gold** is one of the few almost always found

pure It usually occurs embedded in the quartz which fills up veins or cracks in the more ancient strata, or it may be disseminated in invisible particles through the substance of rocks, and it has been found in all parts of the world

Gold may be extracted by mining the quartz veins or "reefs," then crushing the mass into fine sand by means of a stamping "battery," and washing away the lighter quartz by a stream of water which leaves the heavier gold behind, but it is usually more economical to use chemicals such as cyanide of potassium, metallic mercury, or chlorine solution to dissolve out the gold Rivers running over gold-bearing rocks wear them down into gravel which yields large supplies of gold by simply washing away the lighter stones The hardened masses of old river-drift which occur in some of the American cañons are quarried by "hydraulicking" or washing away the cliff by a stream of water at high pressure from a pipe like an enormous fire-hose The chief gold-mines of Europe are in the Ural Mountains and in the Transylvanian Alps The gold-fields of South Africa have given rise to several prosperous towns within a few years, the largest of which, Johannesburg, has become one of the great cities of the world Many cities in the western United States grew up like mushrooms during the "gold fever" of 1848 and subsequent years, although some dwindled away when the supply was exhausted, and in Victoria similar results followed the discovery of precious metal in 1850 The Yukon District in Canada having too severe a climate for agriculture would be left practically uninhabited when the gold is exhausted unless the breeding of reindeer or other polar animals saves it

Silver is rarely found pure, it occurs most often in the state of ore combined with other elements, such as sulphur and chlorine, and often with compounds of lead It is usually mined from veins in solid rock, and the metal must be separated from the ore by chemical processes The most important silver-mines are in Mexico, the western United States, Ontario, along the Pacific slope of the Andes in South America, and in the extreme south-west of New South Wales in Australia

Since about 1880 silver has been growing cheaper than gold when measured by the amount of other commodities that has to be given for it. In 1800 the value of gold was about 15 times that of silver, and by 1885 it had increased to 20 times and by 1900 to 33 times This fact is often spoken of as the **depreciation of silver.**

The statistics which follow give a correct idea of the

relative quantities produced by the chief mining countries, but the figures for some are rough approximations, and the total yield of "all countries" is necessarily an estimate

Production of Gold in million pounds sterling

	South Africa	United States	Australia	Mexico	Canada	All Countries
1900	16[1]	16	13 5	1 5	5	52
1910	35	20	12	5	2	94
1920	49	13 5	5	4	4	90

Production of Silver in million pounds sterling

	Mexico	United States	Canada	S America	Australia	All Countries
1900	7	7	0 6	3	0 7	21
1910	7 5	6	3 5	1	0 5	24
1920	14	12	3	3	1 5	37

Mercury, or *Quicksilver*, is a liquid metal, carried in cast-iron bottles and used in the making of scientific instruments and in extracting gold It is produced in few places, Italy supplies one-half of the world's output, principally from the mines of Idria which before the War belonged to Austria, the historic Spanish mines of Almaden yield about one-third, while the United States, Czechoslovakia and Mexico supply the rest No metal fluctuates more in supply and price

Iron is found everywhere, and there are many kinds of ore *Magnetic ore*, the richest and purest form, is a compound of iron and oxygen, *Red* and *Brown Hematite* are also oxides but less rich in metal, *Spathic ore*, *Clay-band* and *Black-band ironstone* are compounds of iron and carbonic acid Clay-band and Black-band ironstone are the commonest British ores, but hematite is the purest, and best adapted for steel making, it is mined in Cumberland, and is largely imported from Spain

Formerly when charcoal was used in smelting, as it still is in Sweden, ironworks were always near great forests In several countries iron ores occur with coal, which is the chief fuel now employed for smelting, either in its natural state or after heating to form coke The mixed ore and coal, along with limestone, are continuously fed into huge blast-furnaces, 70 to 100 feet high, in which the fire is kept up for months or years at a time The molten **cast-iron** (an alloy of iron with carbon) is drawn off at intervals, and allowed to run into

[1] 1899

open moulds in sand, where it hardens into bars called *pigs* In the processes of Bessemer, Siemens and other inventors, cast-iron is purified by burning out part of the carbon until the metal becomes steel, or by burning it out altogether until pure iron is left When made by the older processes, now very rarely employed, steel was expensive, the cheapest costing about £25 per ton in 1858, but in 1888 its price by the new processes was reduced to less than £4, and the metal, being far stronger than iron, has come into almost universal use, though the price is not now so low The United States, Great Britain and Germany are the greatest iron-producing countries · until 1889 Great Britain kept the first place, but since then the United States has produced more, and now the output of the American blast-furnaces is more than four times as great as that of the British Scarcely less remarkable was the increase in the iron manufacture of Germany which occupied the second place from 1892 to 1918, but the loss of Alsace Lorraine and the Saar basin has reduced Germany's yield to less than that of Great Britain Large deposits of ore exist in Sweden, Spain, Russia, Italy, and in many other parts of the world, these have not yet been largely utilised, in many cases on account of the absence of fuel

World's production of Pig-iron in million tons

	United States	Great Britain	Germany	France	All Countries
1900	14	9	8 5	3	40
1910	27	10	15	4	65
1920	36	8	6 5	3 5	61

Copper is found pure in great masses in the mines on the shore of Lake Superior, but it is most abundant in the form of ores—oxides, carbonates, or sulphides—spread in veins through rock. The sulphur ores of copper are very difficult to reduce to the metallic state Copper-works near foreign mines are rapidly improving, but much ore and *regulus*, or partially purified metal, are sent from Spain, Australia, and Chile, to Swansea, Widnes, and Glasgow, to be smelted by skilled workmen, the objectionable sulphur fumes being caught and used for making sulphuric acid The famous copper-mines of Cornwall are now nearly exhausted The Calumet copper-mine near Lake Superior is probably the deepest which has ever been sunk, work being carried on at a depth of 8000 feet

Annual production of Copper in thousand tons

	United States	Chile	Japan	Mexico	Canada	Peru	All Countries
1900	271	26	28	22	8 5	8	487
1910	482	35	46	59	35	18	845
1920	539 5	93·5	67	48	36 5	32	932

Copper is most largely used for the wires of telegraph cables and other electrical apparatus, and the increase in the use of electricity has greatly stimulated its production It is also used for steam-pipes, and in the preparation of brass, bronze, gun-metal, and similar alloys The price, like that of most metals except iron, fluctuates greatly

Tin, found along with copper in Cornwall, is still produced there to a considerable extent The Malay Peninsula is the tin centre of the world The heavy rains of that region wear down the tin-bearing rocks and cover the river valleys with gravel containing ore, which is collected and smelted by Chinese labourers The British port of Singapore exports the metal, collected from the peninsula and the neighbouring Dutch islands, especially Banka Since 1905 Bolivia has become second in importance in tin production and there are important mines in Siam, China, Nigeria and Australia It is used pure as block tin, but chiefly for coating iron, forming *tin-plate*, and in making *bronze*

Annual production of Tin in thousand tons

	Malay Peninsula	Bolivia	Dutch E Indies	Siam	China	All Countries
1900	48	7	16 5	—	—	80
1910	56	18	14	5	6 5	104
1920	35	29 5	21 5	8 5	8	119

Lead is usually found combined with sulphur as an ore called *galena*, it is chiefly produced in the western United States, where the ore is doubly valuable on account of the large proportion of silver it contains, and in Spain Lead is most largely used for water-pipes, for roofing, for the fittings of chemical works, and in making alloys

Annual production of Lead in thousand tons

	United States	Spain	Mexico	Germany	All Countries
1900	241	152	89	120	813
1910	332	189	124	155	1260
1920	433	170	83	53 5	872

Zinc or *Spelter* is much used for making *brass*, and also for coating ironwork (then called *galvanised iron*) It is chiefly mined and smelted in the United States and Germany

Annual production of Zinc in thousand tons

	United States	Germany	Belgium	Great Britain	All Countries
1900	110 5	158	6 5	30	471
1910	240	216	170	62	789
1920	413 5	96	82	24 5	705

Platinum is a rare metal, always in demand on account of its infusibility, and its incorrodible nature It is now used for chemical and electrical apparatus, and is largely employed in the jewelry industry and in dentistry The main supply which before the War came from the Ural Mountains now comes from Colombia Osmium and other metals similar to platinum are of value in making electric lamps

Nickel occurs in Canada, New Caledonia, the United States, and Norway in greatest amount, it is largely employed, alloyed with other metals, for the small coins of a great many countries, and in a pure state for making cooking vessels It is extensively used for plating steel, for forming an alloy with steel for armour-plates, but principally in making the alloy with copper known as *German silver*

Aluminium is the metal contained in common clay, but usually extracted by an electrical process from the minerals known as Cryolite and Bauxite. On account of its great strength and lightness (only about one-quarter the density of iron) it is used largely for domestic utensils, scientific instruments, boat- and aircraft-building, etc , and for making the alloy with copper, known as aluminium bronze

Manganese is a metal of value as an alloy in the preparation of certain kinds of steel The ore is mined chiefly in the Caucasus, India, Brazil, and Spain

Chromium is an important metal obtained from chromic iron-ore which is mined chiefly in New Caledonia, Rhodesia and the United States It is used as an alloy to harden and toughen steel

Tungsten is a metal derived from wolfram and is used as a constituent of steel for making metal-cutting tools and as a filament in incandescent lamps. The ore is produced mainly in China and Burma

Sulphur, a non-metallic element, found nearly pure, occurs in all volcanic regions, and is worked chiefly in the United

States and Sicily It is chiefly employed for making pure sulphuric acid in Great Britain, the United States, and Germany

Graphite, or *Plumbago*, one form of carbon, the only other non-metallic element of commercial importance occurring pure, is used for making crucibles, "lead" pencils, for lubricating machinery, polishing ironwork, and other purposes The British supply comes chiefly from Ceylon, but there are mines in Siberia, Madagascar, Austria, Czechoslovakia, and Germany.

Diamond, another form of pure carbon, is the most brilliant and, except large rubies, the most costly precious stone India was once the great source of diamonds, the inland provinces of Brazil became more valuable during the eighteenth century, since 1867 the fields of Kimberley in S Africa have been most productive, and since 1904 an even richer field has been developed near Pretoria Diamonds to the value of more than 8 million pounds are annually exported by post from South Africa to London and Amsterdam, where they are cut and polished

Salt is prepared along the coasts of warm countries by evaporating sea-water in shallow tanks, exposed to the sun Large quantities are manufactured thus in the south of Europe, especially in France, Spain and Italy In colder climates artificial heat is usually employed, but in very cold countries the brine is subjected to great cold and the ice, which contains scarcely any salt, is removed as it forms, the water thus being separated from the salt **Brine springs** are found by boring in many parts of the world, and largely supply the United States and China, the bores sometimes reaching 4000 feet in depth These frequently yield natural gas as well, which the Chinese have utilised for centuries to evaporate the brine

There are mines of rock-salt in England, chiefly in Cheshire, and on a gigantic scale on the Continent The vast mine of Wieliczka near Cracow contains many miles of galleries and halls quarried in a mass of solid salt 500 miles long, and 1200 feet thick The cheapest way of raising salt is that usually practised in Cheshire, fresh water is led into the mines, pumped out again, when saturated, and evaporated until the salt crystallises Immense deposits of rock-salt also

occur on the north-west frontier of India The saline lakes and salt plains of hot, rainless regions, such as the Aral-Caspian district in Asia, and the Great Basin in the United States, contain enormous quantities of salt waiting means of transport to become of value Salt is used most largely for the manufacture of soda

Mineral Waters, the product of springs containing various salts in solution usually accompanied with sufficient carbonic acid to make them effervescent, are bottled at the springs in Germany, France, Hungary and many other countries, and are exported to all parts of the world

Cubic nitre (nitrate of soda) occurs in the Andes countries of South America, more than a million tons a year are shipped to Europe for use in chemical manufactures and as a fertilising agent Great deposits of **Borax** or *Tincal* are found in the deserts of Tibet, North America, Chile, and Peru

Another important mineral product used mainly as a fertilising agent is **Phosphate Rock,** which is worked on a large scale in the southern United States and elsewhere

Asbestos also is much in demand, its long fibres being capable of manufacture into fireproof fabrics or into packing for steam-engines and other machinery where a soft substance which can withstand great heat is required It is also used to make thin fireproof sheets for lining wooden buildings It is mined largely in Canada and South Africa

The **Building Materials** accessible in any place depend on the geological nature of the country *Limestone, sandstone, granite,* or other formations, are quarried as building **stones,** and these are used in all regions where solid rocks come to the surface **Brick** is baked from *clay,* and where extensive deposits of this material cover the ground bricks and tiles are used for building purposes In localities where there is a plentiful supply of sand and gravel these materials are mixed with cement and made into **concrete blocks** and slabs which are used instead of bricks and stone. Considerable trade takes place in building materials of special kinds, thus *slate* from Wales, *flag-stones* and *granite* from Scotland, and *marble* from Italy, are exported to all parts of the world **White sand** for glass-making, **kaolin** or decomposed granite

for the finest China-ware, **limestone** to be burnt for mortar and cement, the material for grindstones, lithographic stones and the like, are sought for and transported to the centres of manufacture and consumption

Mineral Fuel The residue of ancient vegetation is of great economic value as fuel The difference between the various forms—*peat*, *lignite*, *coal*, and *anthracite*—is one of degree About half the weight of dry wood is carbon, the other half being composed of hydrogen and oxygen The effect of pressure and heat in the absence of air, as when a vegetable deposit is buried deeply under rock material, is to decompose the wood, while the residue grows blacker and harder As this process continues the proportion of carbon in the residue becomes greater, and the fuel increases in heating power

Peat is the slightly mineralised residue of the mosses and heaths which form the vegetation of wet, temperate climates It abounds in Ireland, Scotland, the great northern plain of Europe, and in the desolate islands of the southern hemisphere, such as the Falklands and Kerguelen **Lignite**, or *brown-coal*, a yellowish or brown substance with a woody appearance, occurs in broken veins or irregular layers, sometimes of great thickness, amongst tertiary rocks, that is, rocks less ancient than those yielding true coal, it is especially abundant along the line of some great mountain-chains, such as the Alps in Europe and the Rockies in America The more ancient carboniferous rocks belong to a time when a dense and luxuriant tropical vegetation of tree-ferns and giant club-mosses overran the Earth, but ages have elapsed since the decaying leaves and stems were covered with mud, and the pressure of newer rocks, deposited during the stupendous changes of the Earth's surface, has almost effaced the vegetable appearance, and produced the black, brittle substance known as **coal** Some varieties are very bituminous, or yield a great deal of gas and tarry oils when heated

Coal mining True coal, like the **anthracite** resulting from the removal of the bituminous part, occurs in beds or seams which in some places have a thickness of more than 60 feet, in Britain they average about 3 to 5 feet, though some exceed 30, and seams of only a few inches are often worked Coal-seams sometimes crop out on a hill-slope, or along a valley, and then they are mined by tunnels driven in with a slight upward slope to let any water drain off The coal, however, usually requires to be reached by shafts or pits sunk vertically downward, from which galleries are formed following each seam The deepest coal-pits are now in Belgium, where some reach 3700 feet beneath the surface, and in many places coal-mines run far under the sea Coal-pits were simply shallow excavations until the invention of

the steam-engine gave sufficient power to pump out the water always flowing into them from the springs they traverse Ventilation in deep workings must also be kept up by steam-fans in order to carry away the coal-gas or *fire-damp*, the presence of which may give rise to explosions, although the use of safety-lamps, through which flame cannot pass, greatly reduces this risk An important development in mining is the introduction of electricity for lighting and power, and the increased use of portable electric lamps Dry coal-dust alone often causes explosions, and dryness in a mine is nearly as great a danger as flooding

Distribution of Coal Denmark, and some other countries have no coal, a few, such as Sweden and Italy, possess very little, but coal-fields are found in most parts of the world, although there are still some places that have been scarcely worked at all The United States, Germany and Great Britain produce more than eight-tenths of all the coal raised in the world The total annual production is more than 1200 million tons a year, which is contributed somewhat as follows

Annual production of Coal in million tons

	U States[1]	Germany[1]	Great Britain	Japan	Czechoslovakia	France[1]
1900	241	147	225	2 5	—	32
1910	448	219	264	15	—	38
1920	576	248	229	31	30	25

	Belgium	India	Canada	Australia	South Africa
1900	23	6	5	6	0 8
1910	24	12	11 5	10	6 5
1920	22	18	16 5	13	10

Bituminous **Shale**, from which paraffin oil and other products are distilled, occurs in few places, and is mined only in Scotland, France, and New South Wales

Petroleum—a natural mineral oil resembling paraffin—is found in almost all parts of the world The United States contains the most productive oil-fields and has maintained supremacy in the petroleum industry since oil was first struck in Pennsylvania in 1859 Mexico is the second largest producer In Europe the principal oil-fields are in Galicia (Poland), România and south-east Russia, especially the district round Baku on the Caspian Sea where the natural supply is greatest The Dutch East Indies, Persia, and Burma are the chief oil-producing countries in Asia In Africa so far oil has been obtained only in Egypt and in

[1] Includes Lignite

Algeria Indications of petroleum have been found in many parts of Canada but no fields have been worked to any extent except those in Ontario In South America the only countries that contribute to the world's supply of petroleum are Peru, the Argentine and Venezuela Petroleum requires to be refined by distillation and other processes before it is fit for use, it is carried on land in tank wagons or by pipe lines, and in tank steamers by sea, the cargo being pumped on board the latter and discharged with great rapidity The world's production of crude petroleum is about 30,000 million gallons, of which the United States supplies over 18,000 and Mexico over 6000 million gallons

Petrol, a volatile spirit obtained in the distillation of crude petroleum, was formerly used for cleaning purposes, but with the introduction of motor traffic this spirit came into demand and it is now the most valuable of the petroleum products The amount of petrol used annually is about 300 million gallons

Natural Gas occurs in many countries and has been utilised for raising steam, heating furnaces for melting glass and metals, and for lighting towns The supply, usually very abundant when first struck in boring, falls off after some time It yields helium, a gas invaluable for balloons and airships

Asphalt, though akin in composition to petroleum and occurring naturally in vast deposits, as in the Pitch lake of Trinidad, or in seams, as in Italy and the United States, is mainly used as a paving material when mixed with other substances.

Calcium Carbide is a compound of lime and carbon of industrial importance as a source of acetylene gas It is manufactured in the United States, France, Italy, Switzerland and Norway in electric furnaces, usually depending on water power

Carborundum is an abrasive material formed by the action of carbon on sand at high temperatures It is manufactured in the United States and Canada and made into hones, wheels and other forms for grinding tools, knives, etc

Gas mantles, first introduced for lighting purposes by Welsbach in 1882, are made from cotton or ramie thread

impregnated with a solution of thorium and cerium obtained from monozite which occurs in commercial quantities in the United States, Brazil and India They emit an intense light when heated in the non-luminous flame of gas or petroleum vapour mixed with air

Utilisation of Resources In this sketch of the mineral wealth of the Earth it will be noticed that some products, like gold or coal, have simply to be *collected* in order to become useful, other products, such as the ores of metals, and petroleum, require to be *worked up*, before they can be applied practically the problem being in all cases to extract the valuable part of the raw material and produce it in a pure state In all these processes of extraction, transport and purification, energy is expended, and as a rule this is obtained by burning fuel Now, however, the energy of rivers, waterfalls and even of the tides is being utilised for separating metals from their ores, and for doing other work through the agency of electricity

CHAPTER III

VEGETABLE COMMODITIES

Vegetation Natural plant regions Agriculture. Staple food-materials—Uncultivated fruits, Cereals, Potato Import of grain Sugar Fruit Spices Tobacco Drugs Oils Plants yielding drink—Alcoholic, wine, beer, spirits, Non-Alcoholic, cocoa, coffee, tea Textile plants—flax, jute, hemp and cordage fibre, cotton Cotton manufactures Paper India-rubber Gums and Resins Dye-stuffs Timber Synthesis of organic compounds

Vegetation is a form of life through which the energy of the Sun rearranges some of the matter composing the air and the crust of the Earth, producing numerous valuable commodities Vigorous plant-life depends chiefly on suitable soil, sufficient warmth, moisture, and abundant sunlight Different climates are best suited to particular kinds of plants, and similar climates in all parts of the world have similar vegetation, the luxuriance and variety decreasing from the equator toward the poles, and from sea-level toward higher altitudes

Natural plant regions There are four great barren zones of the Earth's surface (1) the *Ice Fields* within the Arctic circle, fringed to the south by uncultivable treeless *Tundras*, (2) the chain of *North Tropical Deserts*, where rainfall is slight or wanting, and sun intense, represented by the Sahara in Africa, the deserts of Arabia, Persia, India, and Tibet in Asia, and the alkali wastes of the western United States, (3) the *South Tropical Deserts* of the Kalahari in South Africa, and the deserts of Central Australia and western South America, and (4) the ice-covered *Antarctic* continent

Much of the uncultivated land of the world bears rich grass, but few trees, this is particularly the case in the *Steppes* of Southern Russia, the *Llanos* of the Orinoco, the *Pampas* of the Plate, the *Prairies* of North America west of the Mississippi, and the *plains* bordering the deserts of Africa and Australia These regions supply food for great herds of cattle and sheep Dark pine forests cover the lower mountain-slopes, and natural woods of oak, ash, elm, and beech overspread many of the plains of the northern temperate zone In the tropics dense primeval forests tangled with brushwood and climbing plants extend almost without a break for a thousand miles at a stretch wherever there is abundant moisture and no cultivation

The object of **agriculture** is to produce stronger and more fruitful plants, and to assist their growth by improving the soil and supplying moisture when necessary by canals or other irrigation works When crops are carried away, instead of being left to decay naturally where

they grew, the soil becomes exhausted of certain necessary constituents, and another good harvest cannot be got until these have been restored In Egypt, China, and the north of India, rivers, which overflow periodically, spread a new layer of fertile mud over the fields, but usually fertilising agents or *manures* yielding phosphates and nitrates have to be applied By the **rotation of crops** one kind of plant is raised on a field only for one year, another, which mainly appropriates different constituents, takes its place, and several years elapse before the first crop is again sown A common rotation in England is Turnips, Barley, Clover, Wheat, in successive years By careful management land, naturally poor, may be made to produce far more abundantly than the best soil in a natural state, for instance, in England the average crop of wheat is about 30 bushels of grain per acre, while in Russia with better soil, but worse cultivation, it was only 8

The staple **Food Material** of each country depends on the soil, climate, and facilities of communication Sometimes it grows wild, like the **coco-nut** on the plains of tropical coasts, and the **banana**—most fruitful of food-plants—in all tropical lands, or a certain amount of attention may be required, as for the **date** in Arabia and Egypt Careful **cultivation** is necessary to supply the great quantity of food-stuffs demanded in thickly-populated districts **Cereals**, the most important vegetable foods, are grasses which have been modified by cultivation until their seeds have become very large and nourishing. **Wheat** is the chief food-grain of Western Europe, **barley** is mainly used for brewing, and **oats** for feeding horses. In Northern and Eastern Europe **rye**, a hardy grain yielding a coarse brown flour, is most used **Maize**, or *Indian corn* with stalks 7 to 12 feet high and huge heads packed with close-set grains, is the one native cereal of America. It is grown enormously in the United States, and largely in Southern Europe and South Africa, where it forms a considerable part of the food of the people **Buck-wheat**, the seed of one of the sorrel family, is cultivated chiefly in Russia, the United States, France, and in alpine districts, but is only eaten by the very poor **Rice** is almost the sole food of many millions in Southern and Eastern Asia It grows in the low swampy deltas of the great Indian rivers, around the Bay of Bengal, and over the wide plains of China, wherever sufficient water can be secured by irrigation It is also a common crop in Egypt, in the north of Italy, and

in the southern United States **Millet** in innumerable varieties is the staple food of most of the people of India, and is also greatly cultivated in China and, under the name of Kaffir corn, in South Africa The **potato** has for a long time been the main support of the peasantry of North Germany and Ireland, and **chestnuts** almost take the place of grain in some parts of Italy and Spain The chief constituent of all these foods is *starch*, which occurs nearly pure in the **arrowroot** of the West Indies and other tropical regions, in **tapioca** from the **manioc** root of South America, and in the pith of the great **sago** palm of the Malay Archipelago

When the density of the industrial population is great the ground cannot yield a sufficient supply of food and there must consequently be **import of grain** This is the case in all western European countries Improved transport has brought all the producing regions of the world within easy reach In 1920 about 57 million bushels of wheat were grown in the United Kingdom, but, as each inhabitant requires on the average 6 bushels a year, nearly four times the harvest had to be brought into the country to feed the people Before the Great War which commenced in 1914 the equivalent of 208 million bushels of wheat was imported into Great Britain, largely in the form of flour, which is ground abroad to reduce the cost of carriage One-fourth of the supply came from Russia, the other sources were, according to quantity, Canada, United States, India, the Argentine, and Australia, but the exact order changes from year to year according as the harvests in the various countries are good or bad

Average annual production of Cereals and Potatoes in million bushels, 1911—1920

	U States	India	France	Italy	Germany	United Kingdom	Roumânia	Czecho-slovakia[1]
Wheat	803	353	246	173	120	68	68	15
Barley	197	118	39	9	122	61	27	24
Oats	1321	—	274	33	435	191	26	45
Rye	54	—	37	5	345	—	4	31
Maize	2792	86	17	94	—	—	107	—
Potatoes	368	—	392	60	1337	268	5	121

Sugar occurs in nearly all vegetable juices The **Sugar-cane**, originally a native of Asia, was cultivated for two centuries in the West Indies by slave labour until 1833, when the abolition of slavery nearly ruined the industry, which has never completely recovered The cane is now grown in

[1] 1914–20

all tropical countries, the East Indies being most important From the time of Napoleon's wars, when Europe was blockaded against West Indian produce, sugar-making from **beetroot** has been extending on the Continent, and now of the 18 million tons or so of sugar annually manufactured about one-quarter is from the beet, most of it being prepared in Germany and Czechoslovakia The stalks of the Millet (*Sorghum*), the sap of the sugar-maple of North America, and of the date-palm in India yield sugar readily, and considerable quantities are made from these

Fruit has recently come to occupy an important place in trade Not only are dried fruits such as *currants*, *dates* and *figs* imported, but *oranges*, *lemons* and *grapes* from Mediterranean ports, *apples* from America, *bananas* from Central America, the West Indies and the Canary Islands, *pine-apples* from the West Indies, *grapes* from South Africa, and fruit of several kinds from Australia and Tasmania are brought to Northern Europe **Jams**, fruit juices and pulp are also exported in considerable quantities from Australia and South Africa chiefly to Great Britain and the United States

Spices. Pepper, the dried berry of a creeper, comes chiefly from Singapore, the great commercial emporium for the Malay Archipelago, in almost all the islands of which the pepper-plant grows Much also comes from Java and other islands of the Dutch East Indies The same ports send out **nutmeg**, the kernel of a plum-like fruit, and **cloves**, the dried flower-buds of a plant, which is however more extensively cultivated in Zanzibar and the neighbouring island of Pemba The rolled bark of the **cinnamon** tree comes chiefly from Ceylon, and the **ginger** root mainly from India, China, and West Africa **Mustard**, commercially the most important condiment, is imported from the East Indies and Asia Minor, it is also grown in Holland and England **Curry** and **Chutney** are relishes or seasonings made from spices largely used in India and popular in Europe and America **Vanilla** occurs in Mexico and India

Tobacco, native to America, grows in almost all climates, tropical and temperate Over 600,000 tons of the dried leaves are prepared every year in the United States, 250,000

tons in India, about 100,000 tons in Russia Hungary, the Malay Archipelago, Japan, Germany, the Philippine Islands, Brazil, Cuba, France, and Greece are also large producers. In France, Italy, Austria, Hungary and Spain, the tobacco-trade is a Government monopoly, in all countries it is an important source of revenue

Drugs *Cinchona* bark yields **quinine**, the most valuable medicine obtained from the plant world, and, on account of its curative effects in fever, particularly important in unhealthy tropical countries The tree is a native of the eastern forests of the Andes, but it is now largely cultivated in Ceylon, whence much of the supply for Europe is derived, in Java and in India Varieties of the **Eucalyptus** tree, native to Australia, have been introduced into all hot swampy districts on account of its power of destroying fever-breeding conditions A valuable medicinal oil is extracted from its leaves **Opium**, the dried juice of poppy heads, is a valuable medicine, but it is chiefly used as a narcotic. The **poppy** is cultivated in Egypt, Persia, Asia Minor, and formerly in India and China, where the production of opium is now prohibited Most drugs are derived from tropical plants but many are now prepared synthetically

Oils are pressed from many fruits, particularly from the *Olive*, the *Almond*, the *Oil-palm* of West Africa, the *Coconut* (the dried kernel known as *copra*), *Earth-nut*, and the seeds of *Cotton*, *Flax* (for linseed oil) and other plants These vegetable oils are chiefly in demand for soap-making and the manufacture of butter substitute (margarine).

Plants yielding drink may be grouped in two classes, (1) those containing sugar or starch capable of being changed into **alcohol** by fermentation—the action of microscopic plants contained in yeast—and (2) those bearing leaves or seeds that furnish a stimulating or nourishing beverage when an **infusion** is made with water

Alcoholic Drinks The **vine** is the most important of the former class, it flourishes no further north than 48° in France and 52° in Germany, in America its range is from about 38° N to 38° S The sweet juice of the grapes when fermented forms **wine** France is the chief wine country, but the vine-

growers there and elsewhere had for many years had a severe struggle against the depredations of a small insect, the *Phylloxera*, which destroys the vine by feeding on its roots All the southern countries of Europe, temperate South America, Africa, and Australia produce wine **Beer** is the favourite native beverage in Europe north of 50° N latitude It is made from grain, usually barley, converted into *malt* by changing the starch into sugar, then mixed with water and fermented The resulting liquor is flavoured with **hops**, and brewing is usually centred near hop-raising regions, such as South-eastern England, Southern Germany, and Bohemia Diluted alcohol, separated by distillation from fermented liquors, is known in trade as **spirits**, the special flavour being due to the origin of the alcohol *Brandy* is distilled from wine, *whisky* from fermented malt, *rum* from sugar or treacle, large quantities of spirits are made in Russia and North Germany from potatoes, in Romania from plums, and in different parts of the world from other vegetable products

Average Annual production of Wine and Beer in million gallons, 1901—1910

	Germany	U States[1]	U Kingdom	France	Italy	Spain
Wine	60	35	—	1140	1090	470
Beer	1460	1340	1250	315	—	—

Non-Alcoholic Drinks Cocoa, coffee, tea, *yerba maté* (Paraguay tea), and kola nuts all contain a stimulating substance named *Caffeine*, to which their refreshing properties are due **Cocoa**, first introduced from America by Columbus, remains the national beverage of Spain It is prepared from the seeds or "nibs" of the *Cacao* tree, and is chiefly cultivated in West Africa mainly in the Gold Coast and São Thomé, and in Ecuador, Trinidad, Venezuela, and other parts of South America

Coffee, long used in Arabia, became generally known in Europe about 1650 The infusion of the roasted seeds is drunk most extensively in the countries on the eastern shore of the North Sea and in the United States Brazil, where the tree found a congenial home, is the chief coffee-producing country, raising about four-fifths of the supplies of

[1] The production of wine in the United States ceased in 1919

the world Java ranks next, and Ceylon once held the third place, but a disease—the *coffee blight*—reduced the export thence from 45,000 tons in 1876 to 9000 in 1886, and to-day coffee growing has practically ceased in the island British Central Africa is now taking an important place in the production of coffee

Tea is the tender young leaves and shoots of a Chinese shrub or of an Indian tree, the various qualities distinguished by such names as *Pekoe, Souchong, Congou,* depending on the size of leaf and season of picking One way of preparing the leaf produces *black tea,* the kind usually drunk in Great Britain, another gives *green tea,* which is preferred in North America Small crops of tea have been raised in South America, Africa, Australia, and even Southern Europe, but India, Ceylon, China, Japan, and Java are the only countries whose production affects the European market.

China supplied the bulk of the tea consumed in the world forty years ago Since then the demand for Chinese tea has steadily declined owing to the growing popularity of Indian and Ceylon tea. During the period 1886 to 1914 the amount of tea exported from China dropped from 127,000 tons to 90,000 tons More recently the decline has been accelerated by the Russian revolution Before 1917 China sent three-quarters of her tea export to Russia, some going overland in the form of brick tea, and when this trade ceased in 1920 her total export fell to 20,000 tons Japan produces mainly green tea and exports three-fifths of the crop to the United States Since 1840 tea-growing has been spreading over India from the wet and fertile Assam valley, and it was introduced into Ceylon on the failure of the coffee plantations there From India the total export is about 150,000 tons, and from Ceylon 90,000 a year Indian and Chinese tea were used about equally in the United Kingdom in 1887, but the use of Indian and Ceylon tea has increased so rapidly that in 1920 one-eighteenth only came from China, one-quarter from Ceylon and three-quarters from India In the United Kingdom 1¼ lbs were used per head in 1840, and 8 lbs in 1919 the use of coffee there is decreasing

Annual Consumption in lbs. per head of population, 1909

	New Zealand	Australia	U Kingdom	Canada	Netherlands
Tea	7 4	6 8	6 4	4 4	1 7
Coffee	0 2	0 5	0 7	1 7	16 1

	United States	Germany	France	Belgium
Tea	1 2	0 2	0 1	—
Coffee	11 4	7 3	6 0	12 4

Textile Plants The fibrous bark of trees, dried grasses, palm-leaves, and other vegetable products, are employed for clothing, almost without manufacture, by the uncivilised natives of tropical countries **Flax** is grown chiefly in North Russia and Austria, nearly three-quarters of the world's annual supply of 700,000 tons coming from the Baltic shores before the war France comes next, and Belgium ranks after Italy as to quantity, but produces at Courtrai the finest quality of flax in the market The blue-flowered flax plant, about 3 feet high, is pulled and steeped in water until the soft parts have rotted away, it is then beaten or *scutched* to break up the woody substance and leave the long, fine, tough fibres which form the commodity These are spun and woven into **linen**, a quarter of the world's produce being manufactured in the British Islands, chiefly in Ulster and the eastern counties of Scotland The plant is grown for seed (**Linseed**) most largely in the United States

Jute grows in Bengal on the rich soil of the Ganges valley, the coarse fibre, after being rotted and freed from wood, is exported from Calcutta still to some extent by sailing ships round the Cape, and manufactured mainly at or near Dundee Cordage, carpets, and coarse *gunny cloth* for rice bags and cotton bales are the chief products Gunny bags are exported to Australia and to California for wheat, there are now large jute factories in Calcutta which supply local requirements

Hemp, which can grow anywhere, is the best material for ropes and sail-cloth, that from Italy is the finest, and Russian ranks next The hard, glistening *Manila-hemp*, the produce of the stems of a species of banana, from the Philippine Islands, is the cheapest and most largely used fibre of this class Much *henequen* or *sisal-hemp*, the fibre of a plant of the aloe family, is produced in Central America and in the Bahamas *New Zealand flax* or *phormium*, and *Ramie* grown largely in North Africa, are other fibres used for cordage and coarse fabrics

Cotton is the staple of British trade The United Kingdom consumed nearly 60 per cent of the cotton raised in the world in 1840, but since that time the manufacture has been

greatly extending in other countries, and the British consumption though larger than ever is now only 15 per cent. of the total The *cotton shrub* or *cotton tree* grows in all tropical and warm temperate countries The downy hairs surrounding its seeds are separated by *ginning*, and the raw cotton is packed tightly in bales, weighing about 500 lbs., for export to the manufacturing centres Most cotton is produced in the southern United States, but during the civil war of 1862—65 the cultivation there was stopped, and in order to keep the Lancashire and Lanarkshire mills at work a great impetus was given to cotton growing in India, Egypt, Turkey, South America, and the West Indies In China the cultivation of cotton has steadily increased and new cotton fields have been successfully developed in British East and West Africa, in Nyasaland and in South Africa

Average Annual production of Raw Cotton in thousand tons

	United States	India	Egypt	China	All Countries
1906—1910	2600	730	290	—	4100
1916—1920	2525	692	252	205	4047

The manufacture of cotton is the largest branch of textile industry, as shown in the following table of the number of spindles in use for spinning cotton, wool, silk and flax

Million Spindles at work about 1914

	United Kingdom	United States	Germany	France
Cotton	56	31 5	11	7
Wool	7	4	5	3
Flax and Jute	2	0 2	0 5	0 1
Silk	1	2	1	1 2

Paper is made from a number of *vegetable fibres* by a process of pulping, only linen rags were formerly employed, but other materials are now most largely used, e g wood, woollen and cotton rags, straw, and esparto grass, or *alfa*, specially grown and imported from Spain and Northern Africa The manufacture of wood pulp is an important and growing industry in all forest countries The chief paper manufactories are in the United States, Great Britain, and Germany The material is often employed not only for writing, printing, wrapping and decorative purposes, but in the form of *papier-*

maché as a substitute for wood in many branches of construction

India-rubber, or caoutchouc, is derived from the juice of certain tropical and sub-tropical trees found native in America, Africa and the Indo-Malaya regions It is used in making tyres for motor vehicles, hose pipes, waterproof clothing, and in various forms as a substitute for wood, metal, and leather The growing commercial demand for rubber has led to great activity in rubber planting in many parts of the world, especially in Ceylon, and the Malay Peninsula and Archipelago The best quality is obtained from the *Hevea brasiliensis*, of which there are vast forests in the Amazon basin, and is known in commerce as Para rubber In 1920 the world's total production was estimated at 360,000 tons The islands of the Malay Archipelago yield a similar juice, **gutta-percha**, which in many of its properties is more valuable than india-rubber, and is particularly employed in covering telegraph cables and for golf-balls

Gums and **resins** exude from trees, and are collected for use as drugs, dye-stuffs, or tanning material, *Gum Arabic*, *Gum Tragacanth*, *Camphor* (now of great importance for the manufacture of celluloid), *Cutch*, and *Benzoin* (used for incense) are all obtained in various parts of Southern Asia or East Africa The bark of the **oak** and acorns (*valonia*) are used as tanning material in preparing leather, and so is *gambier*, prepared from a tree grown in South-eastern Asia The pine yields **turpentine, rosin**, and **tar**, the chief sources being the vast forests of Scandinavia, Russia and North America

Dye-stuffs are obtained from the rope-like roots of the *madder* in Europe, the fermented stems of the *indigo* plant in India and Central America, and from the *log-wood* and other trees of South America Many of these colouring materials are now obtained artificially from coal-tar, and their importance as vegetable products has become less

Timber is the oldest material of construction, although no longer used in shipbuilding, except for small vessels, the demand continues to increase, and the woods of the world are rapidly diminishing. In most European countries, and

in India, forests are regulated by Government, and planting is carried on so as to ensure a continuous supply

Extent of Forests, percentage of country covered

Finland	Japan	Russia	Austria	Scandinavia	Czecho-slovakia	Germany	Canada
66	60	40	37	35	33	26	25

Switzerland	United States	France	Italy	India	United Kingdom
20	20	19	15	14	4

The soft northern **pines** form the chief basis of the timber trade, but large quantities of **hard wood** from southern forests are also felled and sold British wood-supplies are drawn mainly from the shores of the Baltic, the neighbourhood of the great lakes of Canada, and the eastern United States Ornamental woods for furniture, such as **walnut** and **maple**, come from North America, **mahogany** from Central America and West Africa, the **cedar** for pencils from Florida, **ebony** from the East Coast of Africa, **oak** and **cork** from Spain and Portugal The giant pines of **red wood** in California, rising to a height of 275 feet, the great **kauri-pine** of New Zealand, and the magnificent **eucalyptus** and **jarrah** of Australia, which grow still higher, all furnish valuable timber **Teak**, grown in the forests of India and Indo-China, is the most useful hard wood it is very largely employed for building purposes in hot climates and for the decks and cabins of war-ships, as it is not attacked by white ants and does not splinter like oak when pierced by a shot

Synthesis of Organic Compounds Many of the products which could formerly only be procured from plants can now be manufactured by chemical processes in any part of the world, and there is a general tendency to rely less and less on natural productions, or on commodities brought from distant places, in many departments of commerce For instance the manufacture of dye-stuffs had become practically a German monopoly and the trade all over the world was completely disorganized by the Great War and is now being slowly built up in various countries

CHAPTER IV

ANIMAL COMMODITIES

Animals and their natural distribution Fisheries Cod and Herring Oysters, Pearls Skins Ivory Feathers Whales Cochineal and lac Domestic animals, Live-stock Meat Dairy produce Wool Silk

Animals convert the energy poured out by the Sun into useful work indirectly by feeding on plants or by devouring other animals which are plant-eaters, and thus they elaborate a number of useful commodities

Distribution of Animals The natural distribution of animals over the Earth depends, like that of plants, on the climate, the configuration of the land, and the supply of food The *fauna*, or native animals, of the old world (Europe, Asia, and Africa), differs from that of the new world (North and South America), but there is a similarity between them, e g between the lion and puma, tiger and jaguar, camel and llama, crocodile and alligator, ostrich and rhea The *fauna* of Australasia is peculiar to itself, containing no large quadrupeds, but only such creatures as the kangaroo, wombat, duckbill, emu, cockatoo and apteryx As the crowding of population in Europe drove emigrants over the seas they took their familiar domestic animals with them **Horses** and **cattle**, which are native to Europe and Asia, were completely naturalised in America, roving in wild herds over the prairies and the pampas **Sheep** and pigs have spread and prospered equally, there being now enormous flocks in South Africa and Australia, as well as in America In Australia the **rabbit**, introduced from Britain, has found so congenial a home and flourished so greatly as to endanger the existence of other grass-eating animals, and a reward of £25,000 was offered by the Government of New South Wales in 1887 for a method of thorough extermination, but the 1800 schemes sent in were all impracticable and the reward was not given

Fisheries The distribution of **fish** depends on the depth, warmth, and saltness of the water, and the abundance of food As a rule the cool northern seas swarm with immense shoals of a few distinct species, such as the cod, haddock, and herring, while the warm tropical waters harbour a far greater variety of fish but smaller numbers of each Marine animals are most abundant on the slopes of continental shores, and on shallow banks rising up from deep water out at sea The *Dogger Bank* in the North Sea for **soles, plaice** and other flat fish, and the *Grand Banks of Newfoundland* for **cod** are the most famous By an international agreement the fishermen of each nation have the exclusive right of fishing within three miles of their own coast, beyond that limit the sea is free to all. Fishermen are exposed to great dangers, especially from sudden storms springing up when the boats are at sea In most countries there is a Weather Department of the

Government which issues warnings by hoisting a signal at every fishing-harbour a few hours before a storm is likely to come.

Estimated Annual Value of Fisheries in million pounds about 1912

United Kingdom	United States	Russia	Japan	Canada	France
11	11	8	7	6	5

The **cod**, which is caught on hand-lines and preserved by salting or drying, is a renowned food fish, and yields a valuable medicinal oil from its liver On the fog-veiled Banks of Newfoundland, where large numbers of British, French, American, and Norwegian vessels are always at work, the annual catch of cod is worth 4 million pounds The fish is chiefly exported salted and dried to the Catholic countries of Southern Europe and South America, to be eaten in Lent The Norwegian cod-fisheries near the Lofoten Islands and the French on the coast of Iceland are next in importance The **herring**, chiefly fished by means of narrow-meshed drift nets from Scottish ports, and from ports on the east of England, is mainly exported salted to the Continent of Europe The **salmon** is caught in stake-nets or seines at the mouths of rivers, the greatest return being made in Britain and in North America, 16,000 tons are tinned on an average every year in British Columbia alone The **sturgeon** of the Volga supported a large trade chiefly in the preserved roe, called *caviare*, and in isinglass The **tunny** and **sardine** of the Mediterranean are the most important food fishes of Southern Europe Long lines, with many hooks baited with mussels, are set off the coasts of Britain for **haddock, whiting,** and flat fish—**sole, plaice, halibut, turbot** etc — but most of the supply for the market is obtained by the use of the trawl, a large net with a heavy ground-rope, which is dragged over the bottom of the sea Large trawlers for the London market go as far afield as the north of Norway and Russia and along the coast of N W Africa Many kinds of fish have been reared artificially from their eggs, which are often transported successfully from one part of the world to another, for instance from Europe to South America and Australia, where rivers have been stocked with trout and other northern species

Shell-fish. **Oysters** and other shell-fish thrive in warm, shallow estuaries, and in many countries, particularly in the United States, Holland, and France, they are cultivated and watched over in order to increase the supply **Pearls** occur in several shell-fish. There are famous fisheries of the pearl-oyster, worked by native divers between Ceylon and India under Government control, and off the north and west of Australia, as well as in the Red Sea, Persian Gulf, and on the coasts of Venezuela and Panama The fresh-water mussel yielding very large and lustrous pearls is found in some of the rivers of Europe, chiefly in Scotland, in America, and especially in China, where it grows to an enormous size, and is carefully cultivated, being treated so as to secure several crops of pearls without killing the shell-fish **Pearl shells,** from which the iridescent mother-of-pearl is cut, are obtained most largely from the West Australian fisheries, and the material is worked into ornamental articles chiefly in Paris and Vienna **Cowries,** small shells used as money in many uncivilised countries, are collected on the shores of the Indian and Pacific Oceans, and are of considerable commercial importance **Lobsters** are caught in baited wicker traps on all coasts, especially in Scotland and Ireland, and in Norway and North America **Sponges** are dredged in the deep water of the Gulf of Mexico, the Red Sea and the Mediterranean Along the margin of the Mediterranean, especially on the African side, many boats are also employed in dredging precious **coral,** the finest kinds of which are worth from £80 to £120 an ounce

Skins Savage tribes satisfy their want of animal food and clothing by hunting and trapping, but the importance of these early branches of industry is steadily diminishing as the number of **wild beasts** decreases The value of the fur-bearing animals of the north led to the appropriation of Siberia by the Russians and to the original settlement of Canada by the French, and these countries still yield the richest supplies About **32** million **squirrel** skins, obtained chiefly from Siberia, were exported from Russia every year, the only other wild animals killed in greater number than **1** million annually are the **rabbit** in Australasia and Europe,

hare in Europe and Asia, **musk-rat** in America, **nutria** in the Argentine Republic, and the **hair-seal** shot on the coasts of Newfoundland, Labrador, Greenland, and in the Antarctic regions The invention of silk hats greatly reduced the importance of the **beaver**, but the **fur-seal**, the skin of which when treated in a special manner yields a rich bronze-coloured fur, is eagerly sought after in the Arctic islands and in the North Pacific Ocean In Bering Sea the British and United States Governments regulate the trade, and limit the period of the annual slaughter The **fox**, **wolf** and **bear** are of value for their skins, there is a steady supply from Siberia and America About 400 **lion** and **tiger** hides are obtained annually in Asia and Africa, and command a high price London, Nijni-Novgorod and Leipzig were the great world-centres for the trade in skins before the war The **hides** of domestic animals, cattle, sheep and horses are used in enormous numbers for making leather

Ivory is obtained in greatest amount from **elephants'** tusks in Africa, where many elephants are killed every year, and the supply always becomes more difficult to obtain The Indian elephants are domesticated and yield little ivory The teeth of the **hippopotamus** in Africa, of the **walrus** and **narwhal** in the Arctic seas, and the curled tusks of the extinct Siberian **mammoth** furnish a small and variable supply The total annual production of ivory is about 1000 tons, of which more than three-quarters come from Africa Its manufacture into billiard-balls, knife-handles, etc is mainly carried on in England, but Dieppe is the centre of the trade in carved ivory

Feathers The feathers of the **ostrich** came originally from the wild birds of Africa and Arabia, but the increased supply is now derived from the tame ostriches bred on the feather-farms of South Africa, and to some extent in Algeria, the Argentine Republic and South Australia, while ostriches have also been successfully reared in Germany The brilliant little **humming-bird** of Central America and the West Indies shares with the larger, but equally gorgeous **birds of Paradise** from the Malay Archipelago, the first place for decorative purposes Commercially the down which the **eider-duck** strips from its breast to line its nest is of greater importance. This

is collected on the lonely rocks of Norway and the western islands of Germany and Scotland Most of the feathers of commerce are obtained from domestic fowls

Whales The **right whale** of the Arctic seas was of value once for the bony fringe that lines its jaws (*whalebone*, formerly worth about £2000 a ton), and for the oil yielded by its blubber Other varieties of whale, including the great sperm whale of the tropics, are pursued for their blubber Most whaling is done by Norwegian and American vessels, the fleets that formerly sailed from Dundee, Peterhead, and Hull are now reduced almost to the vanishing point, and as the right whale has been nearly exterminated, these vessels only pay their way by engaging in seal-hunting also Large and successful whale fishing is now carried on in the Antarctic seas with head-quarters at South Georgia

Insects The scarlet **cochineal** dye, made up of the powdered bodies of a little Mexican insect, cultivated also in the Canary Islands, has become of little importance since the development of coal-tar colours The little **lac** insect causes a secretion of resinous substance on the twigs of trees in India and other tropical countries which is used as *shellac* for making varnishes and sealing-wax, and for stiffening the cloth of which silk hats are made

Deposits of **Guano**, the accumulated excrement of birds, found chiefly in Peru and Chile, are extensively worked to supply fertilising agents, but the supplies are rapidly failing

Domestic animals which were originally tamed, and afterwards by careful feeding and breeding increased in numbers and improved in quality, are maintained in all civilised communities The use of animals for transport is referred to in another chapter, the horse, ass, ox, and camel are also employed in the cultivation of the soil and in moving machinery where neither water nor heat power is available **Horses** are reared everywhere for draught purposes and for the army In Europe, Russia, Austria and Hungary produced most for export, while Germany had the largest demand **Cattle**, **sheep**, and **goats** are kept for the supply of *milk* and *wool*, and killed for their *flesh*, *hides*, *fat*, and *bones*, **swine** for their *flesh* and *fat* **Fowls** of various kinds yield *eggs* while alive,

and when killed food and *feathers*, even insects such as the **bee** and **silkworm** are reared and protected to supply honey and textile fibre

Live-stock The amount of live-stock in each country is constantly changing since the improvement and cheapening of means of transport make it economical to breed fewer and finer cattle in industrial regions where grazing ground is scarce, and to import the chief supplies from abroad where land is cheap and pasture abundant

Million head of Live-stock about 1900, 1910 *and* 1920

Country	Horses			Cattle			Sheep			Swine		
	1900	1910	1920	1900	1910	1920	1900	1910	1920	1900	1910	1920
United States	18	21	20	68	62	66	62	52	55	63	58	59
Russia	21	22	15	36	35	17	52	40	20	13	11	8
Argentina	5	8	9	22	29	27	74	71	45	0 5	1	3
Australia	2	2	2	8	12	13	72	93	78	1	1	1
India	1	1 5	2	86	119	146	18	23	21	—	—	—
Germany	4	4	4	19	21	16	13	11	6	17	22	16
U Kingdom	2	2	2	11	12	12	31	31	23	4	4	3
France	3	3	3	15	14	13	22	19	9	7	7	5
Canada	1 5	2	3	5 5	7	9	2 5	3	4	2	3	4

America and Australia produce most **tallow** and **bones** About 25 million pounds worth of raw **hides** are brought into Europe every year, chiefly from South America and India, to be tanned and converted into *leather*, along with the great quantity produced on the spot **Live cattle** are exported in numbers, and have been carried safely on sea voyages of several months, but the danger of introducing infectious diseases makes it necessary to conduct this trade under many restrictions

Meat may be preserved by rendering it unfit to support the life of the minute germs which produce putrefaction This can be done by sun-drying (as in the case of *charqui* of jerked beef exported in small quantities from South America), by salting, or by simply lowering the temperature The germs may also be killed by exposing the meat to a high temperature for a short time, and the meat is then preserved by sealing it up in air-tight tins Large factories for *tinning meat* are established in many parts of the world, particularly in America The use of animal food is much more general in some countries than in others, the proportion being greatest in Australia and least in Russia for civilised countries

Annual consumption of Meat in lbs per inhabitant, 1905

Australia	New Zealand	United States	United Kingdom	Germany	Canada
239	213	150	112	111	90

Immense quantities of meat are boiled down in South America and Australia to form extracts, without fat or fibre, but in some cases dried fibre is added to the extract Since 1877 the stock-raising industry has been revolutionised by the use of refrigerating machinery which made possible the **transport of fresh meat** in perfect condition to any part of the world In meat-producing countries such as Australia, New Zealand, and the Argentine, freezing works have been established where, immediately the animals are killed and dressed, the carcases are frozen ready for export The ships employed in the meat transport trade are fitted with insulated cold storage chambers and refrigerating machinery to keep them at a temperature below freezing point during the voyage The great ports of Britain, France, Germany and other meat-importing countries have large cold storage buildings into which the frozen meat is transferred from the ships and stored until required for consumption The annual quantity of meat imported into Great Britain and preserved in refrigerated cold storage is about 600,000 tons Liverpool has the largest and most up-to-date cold store in Europe with a capacity for storing under freezing temperature 2,000,000 carcases of mutton and lamb and 260,000 quarters of beef The chambers of this building are cooled on the direct expansion of ammonia system, which is the system of refrigeration most generally used to-day The Australian supply, together with that from New Zealand, was less than $\frac{1}{5}$ of the total in 1882, when the meat trade from the antipodes commenced, and rose to nearly $\frac{2}{3}$ in 1885 In 1920 there were imported into Great Britain 320,000 tons of frozen mutton and lamb from New Zealand, Australia, and the River Plate

Dairy Produce The trade in dairy produce, milk, cream, butter, and cheese, was formerly confined to adjacent countries **Cheese** and **butter** are now brought to Europe from Canada and New Zealand, although butter is being largely superseded by *margarine* or purified animal and vegetable fat **Eggs** of common fowls are an article of trade, the number of hens in the United Kingdom is so inadequate that 847 million eggs, worth over 8 million pounds, had to be imported in 1920 The chief hen-keeping countries of Europe are Russia, Austria, Hungary, Italy, Denmark, France, and Germany, but China contains more fowls than any other part of the world and there are now large exports from it

Wool from its value as clothing holds a high place amongst textile materials The merino-sheep, a native of Spain, yields the finest quality of wool, and this breed has been introduced and acclimatised in Australia, South Africa, and America Sheep are clipped once a year, and on being washed, to free it from its natural grease and the salts resulting from the evaporated sweat of the animal, the fleece loses nearly half its original weight The four greatest sheep-raising regions, Australia, the Argentine Republic, Russia and the United States, produce half of the world's supply of wool The **Angora goat** of Asia Minor has particularly fine wool, called *mohair*, and has been successfully introduced into Australia and South Africa The

Kashmir goat of the Himalayas, the camel in China, and the alpaca in the Andes countries also yield important supplies.

Annual production of Wool in thousand tons

	Australia	United States	Argentina	Russia	New Zealand	Great Britain	All Countries
1899	180	140	170	160	50	60	1210
1909	260	150	150	170	80	60	1200
1920	244	135	115	87	81	45	1200

France is the greatest wool-manufacturing country, Great Britain comes second, and then follow the United States, Germany, and Belgium The wool after being cleaned is first spun into yarn or worsted, and then dyed Some is exported in this state, the rest is woven, either alone, or mixed with cotton, into cloth of various qualities, such as broad-cloth, tweeds, and flannels

Silk Many caterpillars spin a *cocoon* of soft fibrous threads before assuming the chrysalis state, and the cocoons of several wild species (*tussar*-silk) are collected in India, and manufactured into silk, but the Chinese **silkworm** is the only insect reared for this purpose It is fed on mulberry leaves, and 1 oz of eggs when hatched produces caterpillars which devour about 770 lbs of leaves, and yield about 15 lbs of raw silk Like all animals brought up in artificial conditions the silkworm is liable to many diseases, an epidemic which broke out amongst these insects in the south of France in 1851 nearly ruined the silk trade for a time To restore it a new breed of worms was introduced, and a steady trade is now done in silkworm eggs with China, whence the European supply had been originally derived in the sixth century Perfect cocoons when unwound and cleaned furnish *reeled silk* of the finest quality, an inferior kind (*spun silk*) is obtained from the floss or outer covering and from the cut or damaged cocoons Most of the silk produced in Europe comes from the province of Piedmont in the north of Italy, but Lyons in France is the greatest manufacturing centre of this industry

A large trade has sprung up in the manufacture of artificial silk prepared from cellulose, chiefly produced from cotton and wood pulp

Annual production of Raw Silk in thousand tons

	Japan	China	Italy	France	All Countries
1899	6	15	3	0 5	30
1909	13	16	4	0 6	40
1919	14	6	2	0 1	23 5

CHAPTER V

MEANS OF TRANSPORT

Porters Beasts of burden Caravans Traction Roads Rivers Canals Railways. Clearing House. Telegraph Sea transport. Sailing vessels Steamers Navigation Ship-canals Aerial navigation

Porters carrying merchandise for long distances are only employed in places like parts of Africa, where beasts of burden cannot live, and where there are no navigable rivers, roads or railways An ordinary load is about 60 lbs This mode of transport is so expensive that the cost of carrying goods 150 miles from Tamatave to Antananarivo in Madagascar used to be three times the freight charged for the voyage of 8000 miles from Liverpool to Tamatave

Beasts of burden with packsaddles, carrying from 100 lbs in the case of a **donkey** to 200 lbs in the case of a **horse** or **mule**, do much of the transport of materials in Southern Europe, in Asia, and in all mountainous regions where roads are few and bad The shaggy **yak** and the mountain **sheep** traverse the shelf-like paths of the Himalayas with loads on their backs The **llama** for ages brought the produce of the mines of the Andes down to the sea-coast towns In the plains of India the **ox** is almost the only transport animal, although the costly and expensive **elephant** was formerly used

Caravans From the earliest times the **camel** has been recognised as the most suitable carrier for hot, arid regions, since it can go several days without water or food It has been introduced into the western United States, and into the dry regions of Australia and South Africa The camel carries from 300 to 1000 lbs weight, but it swings slowly along at the rate of only $2\frac{1}{2}$ miles an hour, covering about 25 miles a day, in two long marches, broken by a mid-day rest From 40 to 600 camels journey together in a caravan, the gaily-decorated leader being followed in single file by the others linked together in groups by a hair rope The rough tracks through the desert are marked by an occasional well in a grassy oasis where palm-trees grow, and by the whitened skeletons of camels which have died by the way Formerly all the silks and spices of the East reached Europe in this way, but the trade has been practically extinguished by the growing adaptability of motor transport In Africa Arab caravans travel between the railways, the central oases of the Sahara, and the Sudan Camels are costly carriers

Traction Animals can *pull* more than they can carry **Sledges** are used in the far north, where the flat ground is covered smoothly with snow or ice during most of the year Where there is no vegetable food, as in Greenland and parts of Canada, **dogs** are the only animals available, and a team of 12 Eskimo dogs can drag nearly half a ton on a sledge for eight hours a day Where the vegetation of the plains can be reached under the snow in winter the **reindeer**, which is able

to run 100 miles a day over the snow with a sledge, is used for transporting merchandise Throughout Russia and all countries of the northern continents horse sledges or sleighs are used in winter, when snow transforms the whole country into a highway, or frozen rivers form smooth roads through the forests On the trackless plains of South Africa, Central Australia, and America, where railways have not yet been made, **bullock-waggons** drawn by from 2 to 40 oxen form the caravan of the trader

Roads connect all the important places in civilised countries, crossing rivers by bridges and winding through the valleys and passes of mountain ranges In mountainous countries viaducts and tunnels are often necessary, and sometimes the whole pathway has to be hewn out like a shelf or groove along the face of a precipice The highest carriage-road over the Alps crosses the Stelvio Pass 9000 feet above the sea, in the Andes and Himalayas roads ascend in some cases to the height of 15,000 feet or more above the sea In good roads the greatest gradient should not exceed 1 in 30, that is, the steepness should not be more than a rise of 1 foot in every 30 feet traversed A succession of gentle undulations is better than perfect flatness The old Roman "streets," which still stretch across many parts of Europe, were solidly paved with stone like the streets of modern towns For centuries after the Romans, roads were mere cart-tracks, but since the time of Macadam, more than 100 years ago, high roads have been formed of a hard-beaten arched covering of "metal" or broken stones from which the rain runs off freely toward either side, and since motor traffic became universal tarring the surface has given durability to the roads and stopped the plague of dust **Wheeled vehicles** drawn by horses still carry short-distance traffic on European roads The average load of a horse in a two-wheeled cart is about 1 ton, in a light four-wheeled waggon, where none of the weight falls on the animal, it may draw $2\frac{1}{2}$ tons on a level road, 30 times what it can carry, thus in going up a hill of 1 in 30 it exerts twice the ordinary strength, and in going down the same hill requires to do no work at all Cart traffic is carried on in China to an enormous extent, as many as 2000 country carts loaded with farm produce have entered Newchwang in a single day In Great Britain the use of the roads has revived thanks to the rapid increase in motor vehicles With their now widespread employment road transport has developed enormously Traders of the great cities and industrial areas have freely adopted motor-lorries and steam-tractors for the conveyance of goods thus diverting considerable traffic from the railways to the roads while electric trams and motor-omnibuses are continually extending their routes from the towns beyond the adjacent suburbs, and in country districts regular services of road motors are in operation, where they form important auxiliaries and sometimes rivals to railways **Dogs** draw small carts on the Continent, but their use in the United Kingdom is prohibited In China a light wheelbarrow is often employed, assisted in a favourable wind by a sail The jinriksha

or "rickshaw," drawn by a man, takes the place of a cab in Japan, and in many towns in the East and in Africa

Rivers are natural channels for distributing heavy merchandise, especially when the plain part of their course is long, and the climate keeps them free from ice and full of water during most of the year In wooded countries trees felled in the forest during winter and dragged to the nearest stream are carried along by the spring floods, and brought down in rafts, sometimes for hundreds of miles, to the sea **Boats** and **barges** laden with produce of the field or the mine float down the great continental rivers, and either return up stream with a new load drawn by horses or propelled by sails or motor, or else, as in Russia, are broken up for fuel at their destination When a river, flowing gently along a level plain, enters a tidal sea the rising tide reverses the current for many miles In the Thames, for instance, crowds of loaded box-barges drift clumsily up to London with the flood tide, incurring no expense whatever for carriage, and during the ebb they whirl and jostle down again with other cargoes, bumping against bridges and vessels as they pass **Steamers** and motor-boats now ply on all the great rivers and lakes of the world Very light-draught vessels, some carrying several hundred tons but floating in 18 inches of water, navigate shallow tributaries In some rapid streams vessels draw themselves along by means of a chain laid in the river-bed

Canals A horse can draw as much as 100 tons in a barge on still water, hence when canals can be constructed, they are of great service for transporting heavy goods A canal must be on a dead level, all valleys being bridged by aqueducts and all hills either avoided or tunnelled On account of irregularities of country, canals are usually made in successive level lengths, at different elevations, the barges being transferred from one level to another by locks, or hauled up inclined planes by steam power, or lifted vertically by a powerful hydraulic ram and then launched on the higher reach

Railways worked by steam locomotive engines succeeded canals, a fact perpetuated in the name *navvy*, a contraction of navigator A railway is a road, made in as easy curves and as level as possible, carrying parallel rails of iron or steel for the carriage wheels to run on In flat countries railways are carried directly between the towns they are to connect, but in hilly regions they require to follow the natural valleys and passes, usually along rivers, and frequently to tunnel mountains Early railways had **gradients** no greater than 1 in 300, but gradients of 1 in 80 are now common, and 1 in 30 not rare, as the power of locomotives has been increased The most important **tunnels** in the world are those piercing the Alps and connecting Northern with Southern Europe, the longest of them, that under the Simplon Pass, measures 12 miles Excluding tube-railways in towns, the longest tunnel in the United States is the Hoosac, 4¾ miles, and in Great Britain that under the Severn, 4½ miles The Otira tunnel, 5½ miles long, through the New Zealand Alps, is the longest railway tunnel in

the British Empire The longest railway bridges yet built are one over the Tay, 2 miles in length, with 85 spans of wrought-iron girders, one over the Oxus in Central Asia, and one over the Mississippi near New Orleans The Forth bridge at Queensferry is one of the largest ever attempted its length is 1½ miles, mainly in two spans 150 feet above the water, built of great steel tubes Huge bridges unite New York and Brooklyn across East River

Iron rails were formerly used, but steel is now exclusively employed British rails are of the bull-headed type, they are wedged into iron *chairs*, which are fixed by spikes to heavy cross beams known as *sleepers* In America the rail is made with a flat base spiked direct to sleepers placed at close intervals The gauge, or distance at which the two rails are fixed, varies, but 4 feet 8½ inches, the standard in Great Britain, is used on eight-tenths of existing railway lines A single line of rails usually runs through thinly peopled districts, places for passing being provided here and there Busier railways are double, and some have three, or even four lines so as to allow of the simultaneous running of fast and slow traffic

Goods traffic is usually carried on in the United Kingdom by trains of less than 40 waggons, weighing altogether about 700 tons, and travelling at 20 miles an hour or rather less In the United States heavier and longer trains are run Passenger trains often attain speeds over 60 miles an hour, but the average for a long run very rarely exceeds 50, and 35 is common This fast service can only be maintained safely by strict attention to signals, and is best attained by the block system, which allows only one train at a time on any section of the line Continuous brakes, worked by the pressure of air, checking all the wheels of a train at once, greatly add to the security

Special railways have been designed for particular places, such as the toothed-rail lines that climb the Rigi and Mount Washington, the combination of toothed and ordinary rails on the Zermatt and the Pikes Peak lines, the funicular or rope railways on many Swiss mountains, the Metropolitan system in London, which has been mainly tunnelled under the streets and houses, the Tube railways of many large towns bored as continuous tunnels at a great depth, the elevated railroad of New York, a continuous bridge running along the middle of the street, and the similar line in Barmen-Elberfeld built over a river Steam traction is generally employed, although electricity is now used on nearly all tramways, street and underground railways in towns and is increasing on railways with a large and steady passenger traffic Steam railways depend on fuel, usually coal or coke, but sometimes wood, peat, or petroleum Single motor carriages now carry passenger traffic on short branch-lines

Clearing House In Great Britain there are several railway companies the lines of which are in communication so that trains of each company may pass over the whole system The payments to be made by each company to the others for the use of their rails necessitate a very complicated system of accounts, and to facilitate working

a **Railway Clearing House** has been established, to which all particulars of the carriages of other companies running over each line are sent Ultimately a single payment only has to be made or received by each company representing the balance of its account with all the others

Fluid commodities, such as oil, water, sugar-cane juice, and gas, are transported through **pipes**, some more than 500 miles long

As a means of communication the **electric telegraph** is of inestimable value to commerce, and without instantaneous communication between remote places the railway system could never have attained its present stage of development The **telephone** is also of great service and growing into almost universal use **Wireless telegraphy** enables ships to keep in instantaneous touch with the land, and places thousands of miles apart to communicate instantly with each other The introduction of wireless telephones enables publicity to be given to an unlimited number of persons at the same time

Sea transport Three-quarters of the Earth's surface can never be touched by roads or railways, and the command of the sea is essential in the conduct of trade, far more material being carried from country to country by sea than by land

Sailing vessels can if they have time and plenty of sea-room make progress even against the wind, but for a rapid passage the wind must be favourable By taking advantage of such permanent winds as the trades and the "roaring forties" they are able to accomplish their voyages with great regularity In the passage from England to New Zealand and back, a sailing ship goes by the Cape of Good Hope with a fair wind all the way, and returns by Cape Horn driven by the same steady breeze The size of the ships employed in foreign trade has recently been greatly increased, and steel is employed in their construction in place of wood or iron To make a successful passage with a vessel of 5000 tons burden dependent entirely on wind and currents for her motion requires a good knowledge of the principles of navigation, the laws of storms, and the physical geography of the oceans on the part of the captain The building of sailing ships has gradually declined while that of steamers has increased rapidly

Steamers The superior regularity and speed of steamers which, except when unseaworthy or overladen, are almost independent of wind and weather, are of great importance in commerce **Paddle wheels** turned directly by the engines are now confined to river steamers and those making short sea passages The **screw propeller**, universally employed for ocean-going vessels, is fixed in the stern of the ship, and turned by a shaft running through the vessel to the engine-room Triple or quadruple expansion engines, where the steam is used again and again, and more recently steam turbine engines together with twin or triple screws, each with its own engines, have enabled ocean steamers to compete in speed and security with railway trains, some of the Atlantic "greyhounds" attaining a velocity of 26 knots or 30 miles an hour The largest passenger steamer, the "**Majestic**," has a tonnage of 56,000, many steamers exceed 10,000,

5000-ton steamers are common, but the average tonnage of British ocean-going steam-ships (1920) is 1050, the crew averages 27 men The **register tonnage** of a vessel is the space available for cargo, subject to certain deductions the ton measuring 100 cubic feet

Motor craft are being increasingly employed not only for river and coasting traffic but as ocean-going vessels There are more than 2000 motor-ships of over 100 tons already in use and many big liners are under construction in which internal combustion engines will be fitted The advantages gained by ships driven by motors are economy in engine-room space and in fuel consumption, in addition to which stokers are not required as in steam driven ships

Fuel Steamers burn coal as a rule, but petroleum is being substituted largely for raising steam, while river steamers in forest countries burn wood **Coaling stations** have been established in all parts of the world, where cargoes are stored and supplied to steamers on their voyages The speed with which coal can be put on board is important, it varies from a few tons an hour in ocean islets where men or women have to carry it in bags, to 300 tons an hour with hydraulic tips in modern docks **Oil stores** have become necessary with the growing use of oil fuel in ships and are found at convenient points on the steamers' routes

A steamer has three and a half times the carrying power of a sailing ship of the same tonnage, although the average speed of cargo steamers does not usually exceed 10 knots

Tonnage of Sea-going Merchant Ships in million tons

	Great Britain		United States		France		Japan	
	1913	1923	1913	1923	1913	1923	1913	1923
Sailing	0 7	0 2	1 0	1 2	0 4	0 3	—	—
Steam	11 6	19 1	1 2	13 4	0 9	3 4	1 6	3 4

	Italy		Germany		Norway	
	1913	1923	1913	1923	1913	1923
Sailing	0 3	0 1	0 4	0 08	0 6	0 2
Steam	0 7	2 8	2 6	2 5	1	2 4

Navigation In mid-ocean the chief risk is that of collision with an iceberg or another vessel At night all vessels are required to carry a powerful green light on the right (starboard) side, and an equal red light on the left (port) side, while steamers must also have a white light on the mast When two vessels meet, the rule of the road is as on land[1] to keep to the right The rule for passing by night runs in the sailor's rhyme

"Green to green, or red to red,
Perfect safety, go ahead!"

[1] In some countries, e g the United Kingdom, some Colonies, and in Hungary, this rule on land is reversed for riding or driving, the rider keeping to his left on passing another, but the rule for foot-passengers and for sea traffic is universally "Keep to your right"

At sea the position of a vessel is found every day by astronomical observations with the sextant for latitude, and by the chronometer for longitude, and the shortest course can be calculated from the chart, and pointed out by the compass This is not always the quickest course or the one adopted, as it is sometimes advisable to keep out of the straight track to avoid ice, or to secure the help of a favouring wind and current Near land great caution is necessary to avoid rocks and shallows The coast of almost every country has been surveyed, chiefly by British men-of-war, and charts are issued by the Admiralty showing the depth of water at every place, and the position of all rocks and banks In narrow waters and harbours ships usually employ pilots, who know the place thoroughly and can steer through the most intricate channels **Buoys** or beacons mark out the safe passages or give warning of dangerous places, and by night lighthouses, each distinguished from all others by the colour of its light, or the way in which it revolves or flashes, act as guide The possession of good **harbours** is essential to the commercial success of a country, but although splendid natural havens like Plymouth Sound and Port Jackson exist in many parts of the world, most ports have been made useful by dredging and building breakwaters, and must be maintained at a great expenditure of money

Ship-canals exercise an important influence on trade by stimulating commerce, altering routes and shortening distances The Suez Canal reduces the sea distance between Plymouth and Bombay from 12,000 to 7000 miles, and has diverted an immense amount of shipping from Cape Town The Panama Canal across Central America has similarly reduced shipping round Cape Horn to such an extent that lighthouses have been abandoned A ship-canal 61 miles long, admitting the largest vessels, runs between the North Sea on the Elbe and the Baltic at Kiel The Isthmus of Corinth also is severed by a ship-canal The ship-canal between the Mersey and Manchester admits the largest vessels to that inland town 35 miles from naturally navigable water

Aerial navigation as a means of transport can scarcely be considered at present on account of the comparatively small weights that can be carried by airships and aeroplanes, but it is already of importance for fast passenger and mail traffic and is rapidly expanding

CHAPTER VI

PEOPLE AND COMMERCE

People and Density of Population Migrations Forms of Government Consuls Passports Languages Weights and Measures Coinage Time Postal Union Chief Commercial Countries

The population of the world, which is estimated at 1600 million, is very unequally distributed, about one-half being spread over the vast continent of Asia, and one-quarter crowded into Europe Those parts of the world where the density of population is greatest would be of the chief commercial importance if there were no natural or artificial obstacles in the way of trade, but in densely peopled regions which are purely agricultural, such as the great plains of India and China, the people as a rule must give all their energy to raising the bare necessaries of life from the soil, and are too poor to purchase many foreign goods, or they may be shut out from external influence by trade policy or by their own habits and prejudices.

Migrations The races of mankind inhabiting the north temperate zone are first both in civilisation and in numbers, and amongst them the people of Western Europe are at present the most advanced, most energetic, and exert the widest influence on the world at large They have spread from all North-western Europe—but principally from the British Isles—over North America, where their enterprise and business capacity have been stimulated to a yet higher point From South-western Europe, chiefly Spain, they overran South America, supplanting and partially blending with the native races, but in some cases becoming less persevering and law-abiding than when in Europe In Australia, New Zealand and South Africa settlers from North-western Europe have also found congenial homes, where their energies are unimpaired, and it is probable that some of the high plateaus of Central Africa will become peopled by Europeans In tropical lands near sea-level Europeans cannot easily become permanently settled on account of the climate

In Europe and in countries peopled from Europe industrial areas are always the most, and agricultural regions the least, thickly peopled, so that a map showing density of population suggests roughly the occupations of the inhabitants This rule does not apply to the old and populous agricultural states of Asia

Forms of Government There are two characteristic forms of government amongst mankind, the *monarchical* and the

republican or democratic **Monarchies** are of two kinds, (1) *Despotic*, like those of some barbarous peoples, where the will of the chief is the only law, (2) *Limited*, in which the monarch is the head of the State, with more or less administrative power, but the laws are made and, in great measure, administered by **representatives** elected by the people This form of government may be said to be characteristic of north-western and southern Europe, and in Great Britain it differs from the republican chiefly by the fact that the monarch inherits the position and is not elected **Republics** are presided over by a president who is elected by the people, and exercises all the powers of a king when in office The laws are made, as in limited monarchies, by elected representatives In some republics, such as Switzerland and the United States, many states, each with a local representative government, are federated into one nation for foreign affairs and the management of external trade The *Soviet* Republic of Russia is a dictatorship in which the power of the people is little more than nominal The more important British **Dominions** exercise full democratic rights under the nominal control of a governor appointed by the home Government to represent the Sovereign

The system of **tariffs** in each country and the restrictions imposed on trade are continually being changed, and have no relation to the form of Government **Commercial treaties** are often concluded between two nations, in which certain privileges and exemptions from the ordinary tariffs are conceded on both sides for a stated time If such a treaty contain a *Most Favoured Nation Clause* the contracting parties will, while it lasts, participate in any increased concessions which either may subsequently make to any other power

Consuls are appointed by all maritime nations in the principal foreign ports in order to watch over the interests of their fellow-countrymen, who in most despotic and some other countries are amenable to the law of their own land administered by the consul The consul has also to report on the commercial condition of his neighbourhood, the *Consular Reports*, published at a nominal price by the British Foreign Office through H M Stationery Office, are most

valuable works on commercial geography, and those of the United States are no less useful

Passports are certificates of identity and nationality which before the war persons travelling abroad sometimes carried for their help and protection Now no one is permitted to enter a foreign country without one

Languages Many different languages and dialects are spoken by the inhabitants of the world, but few are widespread

Million Persons speaking the Chief Languages

Chinese	English	German	Russian	Hindi	French	Spanish
400	160	130	100	90	70	50

French is usually employed by Governments in international deliberations, but English is the chief commercial language

Weights and Measures The metric system is more generally used than any other, and next to it the British system which still prevails in the British Empire and the United States the "short ton" of 2000 lbs is often used in America, the "hundredweight" there is reckoned as 100 lbs, and the American gallon is only 0 83 of the British imperial gallon It is convenient to remember the following approximate values of the chief metric measures —

Kilogramme	$= 2\frac{1}{4}$ lbs	Hectolitre	= 22 gallons
1015 ,,	= 1 ton	,,	$= 2\frac{3}{4}$ bushels
Litre	$= 1\frac{3}{4}$ pints	Hectare	$= 2\frac{1}{2}$ acres
Metre	$= 3$ ft $3\frac{1}{3}$ in	Sq kilometre	$= \frac{2}{5}$ sq mile
Kilometre	$= \frac{2}{3}$ mile, or 8 kilometres $= 5$ miles		

Coinage The exchange value of the coinage of various countries changes from time to time, and in consequence of the depreciation of silver serious difficulties occur in transactions between nations using gold and those using silver as a standard Since the Great War, which destroyed the value of standard money everywhere, trade has become difficult and complicated by the risk of loss through sudden and violent fluctuations in exchange rates In some countries, such as Russia and Germany, the currency depreciated enormously owing to the printing and circulation of rouble and mark notes in such quantities as to render their exchange value worthless

Time. In telegraphing to distant parts of the world it is essential to remember the difference in time The standard time used in each country varies, but is frequently that of the chief astronomical observatory, which is usually in the capital, such as Greenwich and Dublin Every 15° difference of longitude makes 1 hour difference in time, for

places in west longitude the hour is *before* that at Greenwich, for places in east longitude *after* it Thus at Greenwich noon it is 7 a m at New York (75° W) and 5 p m at Bombay (73° E) By the general agreement of all nations, the *Prime Meridian* or zero of longitude is that of Greenwich, and this is now employed on foreign as well as British maps The hour-zone system of time reckoning, in which the time is changed by steps of 1 hour from Greenwich, has been accepted by nearly all the countries in the world It was first introduced in North America (see United States) and later in Europe Greenwich time is the standard in Great Britain, France, Spain, Portugal and Belgium, "Central Europe time," one hour later, is used for the railways of Scandinavia, Germany, Switzerland, Italy, Austria, Hungary, Poland, Czechoslovakia and Serbia, and "Eastern European" time (2 p m at Greenwich noon) for the Baltic States, Russia and the eastern Balkan States including Greece

Summer Time, which is one hour in advance of Standard Time, was adopted primarily as a war measure in 1916 in most European countries and in North America owing to the need for economy in fuel By the daily addition of one hour of daylight large quantities of coal are saved each year which otherwise would have been used in the manufacture of artificial light In Great Britain the period of duration is prescribed each year by Parliament

The **Postal Union** provides that all the countries entering it have a uniform rate of foreign postage, except in cases, such as the United States and the British Empire, where cheaper international rates exist It includes practically all civilised countries, the uniform rate being twice the domestic rate for letters

The Chief Commercial Countries, the relative importance of which may be measured by the value of their **total trade**, that is the value of all their imports and exports taken together, are nine in number In no other countries did the total trade exceed or approach 200 million pounds sterling per annum Before the Great War of 1914, when steady rates of exchange prevailed, the relative commercial importance of the chief countries was as follows

Total Trade of Principal Countries in million pounds sterling

	United Kingdom	Germany	United States	France	Belgium	Holland	India	Russia	Italy
1896—1900	790	480	400	420	260	280	136	140	105
1906—1910	1120	830	650	600	440	430	234	220	213

PART II

THE COUNTRIES OF THE WORLD

CHAPTER VII

GREAT BRITAIN AND IRELAND

Great Britain and Ireland Coasts Surface Climate Agriculture Live-stock Fisheries Coal The seven chief Coal-fields Metals Minerals Manufacturing Towns—textiles, machinery Canals Railways Shipping The chief Sea-ports Imports and Exports Population People Trade-restrictions Defence *Irish Free State*

Coasts The British Islands separate the shallow North Sea from the Atlantic Ocean for 700 miles The south-eastern corner of Great Britain (at Dover) comes within 21 miles of the continent of Europe, the coast however inclines toward the west, and from Hull northward the North Sea is about 300 miles wide Only two inlets of the east coast—the **Cromarty Firth** and the **Firth of Forth**—form harbours that a ship can enter in a storm without a pilot, the great estuaries of the **Ness**, the **Tay**, the **Humber** and the **Thames**, are very shallow, full of shifting sand-banks, and can only be entered by experienced pilots The south coast of England and the coast of Wales have many fine natural harbours, such as **Southampton Water**, **Plymouth Sound**, **Falmouth**, and **Milford Haven** Wide shallows and bars obstruct the ports of the north-west of England and the east of Ireland, but many deep narrow inlets wind inland for miles on the west coast of Scotland and the west and south of Ireland Ships are warned and guided at night by **lighthouses** on promontories or sea-girt rocks round the islands and by **lightships** anchored off the dangerous sand-banks and sunken rocks of the coast All channels and harbour entrances are marked by floating **buoys** or fixed **beacons** Most of the harbours are accessible to shipping only for a few hours twice daily when the rising **tide** increases the depth of water by from 8 to 20 feet

Surface Great Britain is divided from north-east to south-west into zones which differ in physical character The sterile

Scottish **highlands** of ancient crystalline rocks are succeeded by the fertile soil and coal deposits of the **lowlands**, these are followed by the grassy **southern uplands** which are continued as the Pennine Chain through the centre of England to Derbyshire, with coal, iron, and limestone cropping out on the slopes **Mountains** of ancient rock containing metallic ores occupy Wales, and similar rocks occur in the peninsula of Cornwall and Devon All the rest of England is an undulating **plain** crossed by lines of low limestone or chalk or sandstone hills, and composed toward the south-east of successively newer deposits which form a more and more fertile soil The eastern **rivers** are as a rule longer and slope more gently than those of the south and west, they are consequently larger, less rapid, and more easily navigated

British **Climate** is the most equable and favourable for industry in the world The latitude, between 50° and 60°, ensures a period of daylight of about 17 hours in mid-summer and 7 hours in mid-winter The warm water of the Gulf Stream and the **south-westerly winds** which blow most of the year bring mild weather, outdoor work and traffic being rarely stopped unless for a day or two by an exceptionally severe snow-storm This *oceanic climate* contrasts strongly with the severe *continental climate* of inland places in the same latitude Ireland and the west of Great Britain have the warmest winter and coolest summer weather, the cloudiest sky, and the heaviest rainfall, while the east of England, which receives the west winds after most of their moisture is deposited, is dry and bright, the coldest part of the country in winter and the hottest in summer Yet because the ground is more level on the east and usually clayey in its character the smaller rainfall remains longer on the land and is as effective for agriculture as the heavier rainfall on the steeper slopes of the west

Agriculture The area of Great Britain and Northern Ireland is a little over 94,000 square miles or **60** million acres, but about one-third of this is occupied by the mountains of Scotland and Wales, which cannot be cultivated on account of poor soil and inclement climate In *Scotland* the narrow strip of low ground along the east coast from Caithness to Berwick is highly cultivated, and the margins of the firths are as fertile as any land in the kingdom, **oats** and **barley** form the chief crops, and oats also grow in *Northern Ireland*, where the moist climate makes other grain unprofitable **Wheat** requires rich soil, abundant summer sunshine, and

little rain, in order to ripen well These conditions are not found in Northern Ireland, in *Scotland* they only occur on the coasts of the eastern firths, but most of *England* fulfils them perfectly, especially in the eastern counties. The farms of Lincolnshire, Yorkshire, and Essex produce one-fourth of all British-grown wheat, and the yield sometimes approaches 40 bushels an acre, the average for the whole country being about 30 The cheapening of foreign wheat has reduced the area in Great Britain under this cereal from 4 million acres in 1867 to 1 9 million in 1920 **Potatoes** and **turnips** are the staple root crops. **Market gardening** is of importance in the neighbourhood of large towns, **apples** are particularly cultivated in the southern counties, while **strawberries, gooseberries,** and other fruits are receiving increased attention in all parts of the country On account of their mild climate the Scilly Isles have acquired great importance for the production of early vegetables and cut flowers Steamers connect at Penzance with the Great Western Railway **Flax** covers a considerable area in Northern Ireland and also in Yorkshire, and **hops** are grown in Kent and Sussex. Attempts made to introduce tobacco, beetroot, and other industrial plants are proving successful Large farms and the extensive use of machinery in cultivation are necessary in order to obtain paying crops from the soil Village blacksmiths have now more to do in repairing reaping machines than in shoeing horses, and large implement manufactories have arisen in the farming centres

Thousand Acres under Chief Crops in 1922

	Pasture Grass	Oats	Wheat	Barley	Turnips	Potatoes
Great Britain	19,920	3,150	2,030	1,520	1,220	720
Northern Ireland	2,000	400	6	2	48	168
Total	21,920	3,550	2,036	1,522	1,768	888

Live-stock More than half the cultivable land of Great Britain is permanently under grass for **pasture** The breeds of English **cattle** are unrivalled for size and weight, as English **horses** are for strength, endurance, and beauty Most cattle are found in the central counties of England, **sheep** predominate on the chalk and limestone wolds and

downs of the east and south, and in Scotland on the southern uplands, especially the Cheviots, and on the highland mountains of Argyll

Thousand Head of Live-stock in 1922

	Sheep	Cattle	Pigs	Horses
Great Britain[1]	20,100	6,870	2,450	1,310
Northern Ireland	500	830	120	100
Total	20,600	7,700	2,570	1,410

In spite of this large animal population about 100,000 live sheep and 400,000 cattle are imported every year, as well as immense quantities of dead meat (See p 36)

Fisheries Every sea-side village contains some fishermen, but the great fisheries of the country are concentrated in a few places Fleets of steamers and of sailing smacks from ABERDEEN (159), HULL (287), GRIMSBY and YARMOUTH trawl all the year round on the *Dogger Bank* and over the *North Sea*, sending in the catch daily by special fast steamers to various ports, especially LONDON, where *Billingsgate* is the largest fish-market in the world PLYMOUTH (210) is the centre of the *South coast* trawling and mackerel fishing **Cod** fishing is carried on round the *Shetland Islands*, and on the distant *Rockall Bank* by welled smacks which bring back the fish alive to GRIMSBY or HARWICH, where they are kept until wanted in half-submerged boxes The **herring fishery** gives periodic employment to several thousand large boats, YARMOUTH being the head-quarters in England, the *Clyde lochs*, STORNOWAY, WICK, FRASERBURGH, PETERHEAD, and ABERDEEN the chief centres in Scotland. Herring fishing commences in April at STORNOWAY, moves round to the east coast, advancing with the season, and ends in November at YARMOUTH Government officials mark all barrels of herring cured at Scottish ports with a **brand** certifying the quality, and in virtue of this the barrels are accepted in foreign markets unopened **Pilchard** fishing occupies several ports in *Cornwall* and *Devon*, the fish being preserved in oil like sardines at ST IVES **Salmon** are captured in the tidal waters of the *Spey*, the *Tay*, the *Tweed*, the *Severn*, and other

[1] Including Isle of Man and Channel Islands

rivers, and in the neighbouring sea **Oysters** are cultivated at WHITSTABLE on the Thames estuary, at COLCHESTER, and at many sheltered places round the coast England employs about 40,000 fishermen and Scotland about 31,000. Steam trawlers from English ports go as far as the fishing banks off Iceland At herring-curing stations there is a constant demand for salt, and great activity in making barrels and in cleaning and packing the fish

Coal The quantity of coal raised in the British Islands steadily increased from 64 million tons in 1855 to 290 million tons in 1913 At this rate of production it is calculated that the available British coal will last for several hundred years About 60 million tons are exported, the rest being consumed in the country for manufacturing and household purposes Ireland produces only about 100,000 tons a year and depends on Great Britain for her coal supply To the south-east of a line drawn from the mouth of the Severn to the Wash no coal appears on the surface, but deep borings near Dover have succeeded in proving the existence of coal at a depth of 2000 feet, mines have been sunk to reach it and there is a small output At present there are no large towns, not seaports or suburbs of LONDON, on the region where no coal is worked, while large towns maintaining great manufactures are very numerous on the coal-fields The 20 coal-fields of Great Britain may be grouped in six districts, where 1,000,000 people are employed in working the mines The coal production noted below is that for 1920, when the whole produce of the country was 230 million tons

(*a*) **The Yorkshire Coal-field** on the eastern slope of the Pennines, and extending into Derbyshire and Nottingham, produced about 66 million tons The mines are not well situated for shipping, and most of the coal not used in the multifarious manufactures of the district is sent by rail to LONDON SHEFFIELD (490), the historical steel-city, is in this region, but the multitude of towns and villages engaged in the woollen trade clustering round LEEDS (458), BRADFORD (286), HUDDERSFIELD (110), NOTTINGHAM (262) and DERBY (130) justifies the name of *The Woollen Coal-field*

(*b*) **The Northern Coal-fields** in Northumberland and Durham produce 42 million tons a year, much of which is shipped at the ports of the *Tyne*, *Wear*, and *Tees* to all parts of the world, but most is consumed in the ironworks and shipyards of NEWCASTLE (275), SUNDERLAND (159), HARTLEPOOL, and MIDDLESBROUGH (131)

(*c*) **The South Wales Coal-fields**, in Glamorgan, Monmouth, and adjacent counties, are specially valuable for their supplies of **anthracite**, the only coal used in the ships of the Royal Navy on account of its smokelessness The towns in the Rhondda valley, especially YSTRADYFODWG, are increasing rapidly in size on account of the coal production Of the 46 million tons of coal and anthracite produced, nearly half is exported to foreign countries and coaling stations from NEWPORT, CARDIFF (200), BARRY, and SWANSEA (157) The ironworks of MERTHYR-TYDVIL, and EBBW VALE, the copper-smelting of SWANSEA, and the manufactures of CARDIFF depend upon this supply

(*d*) **The Scottish Coal-fields**, scattered over the Lowlands, produced 31 million tons Those of Lanarkshire and Ayrshire supply the manufactories of GLASGOW (1034), the shipbuilding ports of the *Clyde*, the ironworks of the HAMILTON and CUMNOCK districts, and the north of Ireland Fifeshire supplies the industrial towns of the east of Scotland and exports from the Firth of Forth to the Baltic, the Lothians send coal to EDINBURGH (420) and LEITH, and are rich in **oil-shale**, 3 million tons of which are annually distilled for paraffin oil and wax

(*e*) **The Lancashire or Cotton Coal-field** yielded 19 million tons, most of which is used on the spot in the most densely peopled and industrious part of England Lines of great brick buildings, bristling with tall chimneys and vibrating with the whirr of spinning frames and power looms, cover hundreds of square miles, condensing here and there to form large cotton-trading towns such as MANCHESTER (with SALFORD 965), OLDHAM (145), BOLTON (178), and BLACKBURN (126) Iron furnaces, engine shops, chemical works, and ship-yards line the shores of the *Mersey* and *Ribble*, giving employment to many busy towns

(*f*) **The Staffordshire Coal-fields** are small and scattered, with an output of 12 million tons Mines in the north of the county supply the *Potteries* round STOKE-UPON-TRENT (240) Those in the south sustain the iron-manufactures of the *Black Country*, where the sky is darkened by day and lighted at night by innumerable furnaces, the air filled with the clang of hammers, and the bare cinder-strewn ground traversed by a network of triple or quadruple railway lines and narrow canals of black, stagnant water The manufacture of metals concentrates in BIRMINGHAM (919), COVENTRY (128), WOLVERHAMPTON (102), and WALSALL This is the coal-field nearest LONDON, whither supplies go by rail and canal

(*g*) There are small **isolated Coal-fields** in *Cumberland*, *North Wales*, at *Coalbrookdale* in Shropshire, the *Forest of Dean* in Gloucester, near BRISTOL (377), where the coal-mines are the most difficult to work, and, farthest south, near DOVER in Kent Together they produce about 13 million tons

Metals Ores of **Iron**, in the form of the common *clay-band* and rarer *black-band*, are frequently found in the same mines as coal, and most of the iron manufacturing districts have been referred to in speaking of coal-fields MIDDLESBROUGH owes its prosperity entirely to the clay ores of the *Cleveland* hills, and the port of BARROW has rapidly risen in importance on account of the much more valuable *red hematite* of Cumberland and North Lancashire In 1920 nearly 13 million tons of iron ore were raised in Britain Between 6 and 7 million tons yearly are imported from abroad, mainly from Spain From all sources 8 million tons of **pig-iron** are manufactured, one-third of which is afterwards converted into **steel** About 300 blast-furnaces are in use for smelting iron from the ore, though a larger number of smaller capacity was formerly employed **Tin** ore is only mined in *Cornwall* and *Devon*, **copper** occurs along with it, but the quantity raised is now very small The large supply of imported copper ore is smelted exclusively in the neighbourhood of SWANSEA and WIDNES **Lead**, with **silver**, is extracted at *Leadhills* in Lanarkshire, in *Cumberland*, Wales, Northumberland and in some other places **Zinc**, obtained

mainly in Cumberland, Northumberland and North Wales, is frequently mined along with lead **Aluminium** is produced on a large scale by hydro-electric power at Kinlochleven in Argyllshire

Other Minerals **Slates** are obtained from Wales, chiefly at LLANBERIS and FESTINIOG, from Westmorland, and parts of Scotland, **paving stones** from THURSO in Caithness and from Forfarshire **Granite** from the old rocks of Scotland, Ireland, and the west of England, is used for building, but the various kinds of **limestone** and **sandstone** are more largely quarried **Clay** for *brick-making* is most abundant in the south-eastern counties, and **china-clay** is sent in great quantities from the decayed granites of Cornwall and Devon to the Staffordshire *Potteries* **Salt** is manufactured mainly in Cheshire from the rock-salt mines about NORTHWICH, and in Worcestershire at STOKE and DROITWICH

Mineral production of Great Britain

	Coal	Iron[1]	Slates	Tin[1]	Salt	Clay	Lead[1]	Shale
	Amount, in thousand tons							
1900	225,200	4,670	590	4	1,800	14,000	24	2,300
1910	264,400	5,000	420	5	2,050	14,090	22	3,130
1920	229,500	4,000	215	3	2,160	11,000	11	2,800
	Value in thousand pounds sterling							
1900	121,650	19,600	1,530	590	610	1,570	420	630
1910	108,380	17,010	1,060	740	580	1,760	280	860
1920	396,870	50,180	1,760	907	2,470	3,650	419	2,080

Manufacturing towns using steam power require to command a supply of raw material and coal, hence in Britain, where most of the raw material is imported, they are usually situated on a coal-field near a seaport, but improvements in sea-transit and in utilising fuel, and the great cost of railway carriage, make it cheaper in many cases for inland manufactures to desert the coal-fields for the coast, or, as in the case of MANCHESTER, to open a way for ocean steamers to the town

Textile manufactures, the staple of British trade, employ directly 1¼ million people, nearly two-thirds of whom are women, and indirectly probably 3 million more

[1] Metal after extraction obtained from British ores only

Cotton was imported exclusively at LIVERPOOL (803) until the opening of the Manchester Ship Canal in 1894, and distributed to MANCHESTER, GLASGOW, and other manufacturing centres Almost all the cotton factories of the country are situated in *Lancashire* and *Lanarkshire*, particularly in the former county MANCHESTER is the commercial centre for cotton, the actual spinning and weaving being carried on in the surrounding towns Dyeing and calico-printing works are relatively most numerous in Lanarkshire The annual import of raw cotton averages 900,000 tons, of which about 100,000 tons are re-exported, the remainder being retained for manufacture About 3 million miles of cotton cloth are exported every year, the value being *1s 2d* per head of the population of the world

Woollen manufactures, first in order of antiquity and second in importance, use up 300,000 tons of foreign wool yearly in addition to the native supply Most of the English factories are in the *West Riding* of Yorkshire, where the large towns, such as LEEDS, BRADFORD, HUDDERSFIELD (110), and HALIFAX (99), each with its special department of cloth-making, are surrounded by busy villages There are isolated woollen factories in *Gloucestershire* for "West of England cloth", in *Wales* for flannel, and in *Northern Ireland* In *Scotland* the principal production is of tweeds at HAWICK and GALASHIELS in the Tweed valley

Flax is spun and **linen** manufactured chiefly at BELFAST (385) and other towns in the flax-growing district of Ireland This industry has long been pursued in KIRKCALDY and DUNFERMLINE and other towns of the eastern counties of Scotland Linen-weaving receives less attention in England, the factories of LEEDS and the neighbourhood in most cases simply spin the fibre which is sent out as yarn

Jute is the characteristic textile manufacture of Scotland, the trade being almost confined to DUNDEE (168), ARBROATH, and the neighbouring towns

Silk has greatly declined in importance as a British manufacture, and the industry is not distinctly localised *Spitalfields* in LONDON is historically associated with silk-weaving, and still contains looms, but MACCLESFIELD, CONGLETON,

COVENTRY and neighbouring towns are now more important especially for the manufacture of artificial silk.

Thousand persons employed in 1911

Factories	Cotton	Wool	Silk	Flax	Rough textiles	Other textiles	Total
England & Wales	605	223	30	5	27	201	1,091
Scotland	18	28	1	24	51	21	143
Ireland	2	5	0 3	73	2	23	105
U Kingdom	625	256	31	102	80	245	1,339

Machinery is made in all manufacturing, agricultural, and railway centres MANCHESTER, BIRMINGHAM, LEEDS, and GLASGOW contain most of the largest establishments BIRMINGHAM is the great centre of gun-making, more than half-a-million **gun-barrels** being turned out every year Some small departments of metal-manufactures are localised, such as **nail**-making by hand in the *Black Country*, **screws, pens, pins,** electro-plate, and jewellery in BIRMINGHAM, and **motor cars, bicycles** and other **machines** at COVENTRY **Pottery** and earthenware employ many hands in *North Staffordshire* **Bricks** and tiles are manufactured all over England, but the largest brick-fields of the country occur in the south-east in the clay country of Norfolk, Essex, and Kent **Chemical works** of enormous magnitude for the manufacture of sulphuric acid and soda are situated in GLASGOW, the *Tyne* district, the south of *Lancashire* and other places

Drink manufactures are chiefly of **beer** in *England* and **whisky** in *Scotland* and *Ireland* There are world-famous breweries in the capitals of each, but more beer is probably brewed in BURTON-ON-TRENT, which contains the great establishments of Bass and Allsopp, than in any other town in the world

Canals Great Britain is traversed by about 1800 miles of navigable rivers and 3900 miles of canals The *Caledonian* and *Crinan* canals in Scotland were designed to save coasting vessels a stormy passage, the Manchester Ship Canal admits ocean-steamers into the heart of the Lancashire manufacturing district, the ship-canals of GLOUCESTER and BRISTOL are simply harbour improvements, all the other water-ways

are for the conveyance of goods by barges The *Forth* and *Clyde* estuaries are joined by a canal between GRANGEMOUTH and BOWLING The Pennine Chain is crossed by two canals uniting the *Humber* and the *Mersey*, and the Central Plain of England is traversed by a complicated network which brings all parts of the country into water communication with the four great river systems, the *Humber*, the *Mersey*, the *Thames*, and the *Severn* In Northern Ireland a canal connects *Lough Neagh* with the sea

Railways form a close network over the coal-fields and commercial districts of the kingdom, and penetrate the less densely populated regions as trunk lines with a few branches In 1920, 23,700 miles were open for traffic, of which 16,148 were in England and Wales As the gauge of the lines is uniform, a truck of goods may be sent through without reloading to any part of the country The London *Underground Railways* in shallow and deep tunnels are amongst the busiest passenger lines in the world, conveying a large part of the commercial population of LONDON to and from the City daily

The railways of Britain are grouped into four systems, namely the Great Western, the London Midland and Scottish, the London and North Eastern, and the Southern, all of which radiate from LONDON, although there are many minor centres where they converge

The **Great Western** system (3,765 miles), with Paddington as its terminus, runs west to READING where it branches south and north as it proceeds westward until it forms a network, with the main termini widely apart at CHESTER, MILFORD, BARNSTAPLE, and PENZANCE The great Severn Tunnel connects directly with the South Wales district BIRMINGHAM is an important centre on this line From WEYMOUTH mail steamers leave for the Channel Islands

The London Midland and Scottish system (7,464 miles) The *London and North-Western Section*, runs from Euston direct to CREWE, sending out branches which interlace with the Great Western system on the south and with the Midland Section on the east, from CREWE it spreads through Wales, across the Menai Bridge to HOLYHEAD (on the mail route to DUBLIN), to LIVERPOOL, and through the cotton district to CARLISLE Hence it continues northward passing through Scotland to GLASGOW, EDINBURGH, OBAN, PERTH, DUNDEE, and ABERDEEN, whence the mail steamers sail for *Shetland* From PERTH the *Highland Section* traverses the glens and passes of the mountains to the extreme north and west of Scotland, connecting at THURSO with the mail steamer for *Orkney*, and at Kyle of Lochalsh with that for STORNOWAY The *Midland Section*, from St Pancras, runs nearly parallel to the North-Western to MANCHESTER, northward by SHEFFIELD through the woollen district to CARLISLE, joining the *North British Section* across Scotland (Waverley route)

to EDINBURGH, and the *Glasgow and South-Western Section* to GLASGOW Another line runs from DERBY (130) through BIRMINGHAM and GLOUCESTER to BRISTOL From HEYSHAM in Lancashire steamers run to BELFAST

The London and North-Eastern system (6,464 miles) The *Great Northern Section* runs from King's Cross, north to PETERBOROUGH and YORK, sending branches into Lincolnshire At YORK it connects with the *North-Eastern Section*, which spreads over the three northern counties, and at BERWICK joins the east coast branch of the *North British* which leads to EDINBURGH, thence by the Forth Bridge to PERTH, by the Forth and Tay Bridges to DUNDEE and ABERDEEN, and by GLASGOW to the *West Highland* line, which runs to FORT WILLIAM and MALLAIG The *Great Central Section* from Marylebone, runs to LEICESTER (227), MANCHESTER, SHEFFIELD and other towns of the great manufacturing districts, and to Grimsby whence a regular steamer service runs to Dutch and Swedish ports The *Great Eastern Section* leaves LONDON at Liverpool Street in two main lines, one of which runs to HARWICH in connection with steamers to continental ports, the other through CAMBRIDGE and ELY to LYNN, numerous branches traverse the eastern counties

The Southern system (2,129 miles) includes the *South-Eastern Section*, with termini at Charing Cross and Victoria, the *Brighton Section*, with termini at Victoria and London Bridge, which together serve the counties of Kent, Surrey, and Sussex, from the Thames to PORTSMOUTH (247), and carry the bulk of the Continental trade from DOVER, FOLKESTONE, and NEWHAVEN The *London and South-Western Section* runs straight from Waterloo Station through SALISBURY to EXETER, sending branches to most of the coast towns between SOUTHAMPTON (161) and PLYMOUTH

The **standard time** for railway and for all other purposes in Great Britain and Ireland is that of Greenwich Observatory

The Shipping Industry The British Islands occupy the most **favourable position** in the world for ocean communication with all other places The mercantile navy, comprising 18,600 vessels with an aggregate tonnage of 11 million (of which 10 million represent 12,000 **steamers**), is the largest in the world British ships do most of the ocean-carrying for foreign nations, and the majority of iron and steel steamers sailing under foreign flags, except American and German, were built in British ship-yards **Shipbuilding yards** occur along both banks of the *Clyde* at intervals from GLASGOW to GREENOCK, and in these many of the largest steel vessels are built The ports of the *Tyne*, the *Wear*, and *Tees*, especially NEWCASTLE, SUNDERLAND, STOCKTON (64),

and HARTLEPOOL, together launch a considerably greater tonnage than the Clyde, while a smaller amount is built at LIVERPOOL, BELFAST, MIDDLESBROUGH and BARROW. Wood is now used only for small vessels, such as fishing smacks

The five **chief seaports** carry on more than one-half of the maritime trade of the kingdom, reckoning by tonnage, the figures given below refer to 1920 and exclude coasting trade, which if included would nearly double the amount LONDON and LIVERPOOL together account for 57 per cent of the trade of the country, considering the values of the cargoes, HULL comes next with 6 per cent, and when MANCHESTER, SOUTHAMPTON and GLASGOW, with 4 per cent each, are added, these six ports account for three-quarters of the total trade

(*a*) The Port of LONDON consists of the River Thames with a vast and complicated system of docks, occupying the projecting land between the river-windings The **movement** of the port, or the capacity of the shipping entering and leaving, is about **21** million tons a year for over-sea trade The *imports* of merchandise from all parts of the world greatly exceed the *exports*, and the **tea, tobacco**, and **wine** brought into LONDON by sea contribute nearly half the Customs revenue of the country LONDON, with its population of about 5 millions, is a mercantile, rather than a manufacturing centre, although it contains works representing almost every branch of industry Its position as the metropolis makes it the head-quarters of the principal railway and banking companies, the Royal Exchange and Bank of England form the centre of the financial world It is entirely unlike any other town, in magnitude, range, and variety its activities resemble those of a complete nation As an *entrepôt* or market for transhipping goods the port has been steadily declining since the opening of the Suez Canal offered a direct route for the produce of the East to Southern Europe

(*b*) LIVERPOOL (with BIRKENHEAD 949) on the rapid bar-blocked Mersey, with an annual movement of over **18** million tons, resembles LONDON in being mainly

a mercantile city Its docks rival those of the Thames in extent, the trade is more specialised, the *imports* consisting chiefly of **cotton**, **grain**, and **cattle** from America and the produce of West Africa. It is the ocean-gate for the intensely active Lancashire district, bringing in raw cotton, and exporting the finished cloth to all the world It exports more British manufactures and produce than any other port in the kingdom, and has most of the passenger trade with America Yet it is remarkable in having no exports of coal

(*c*) CARDIFF on the Bristol Channel, with about 11 million tons movement, is, together with BARRY DOCK, the chief export harbour for the **coal** and **iron** of South Wales It is a progressive and prosperous city, profiting greatly by the migration of ironworks and factories from inland districts to the coast Its export of coal averages nearly half the value of the whole coal export of the country

(*d*) The *Tyne Ports*, including NEWCASTLE and NORTH and SOUTH SHIELDS (116), have a movement of 10 million tons The chief export is **coal** from the northern fields, and **iron** and **steel** manufactures from numerous works in the neighbourhood, the most celebrated of which is Armstrong's gun-factory at Elswick, where war-ships are built and the largest cannon made

(*e*) SOUTHAMPTON has a shipping trade of 8 million tons movement, and also a large foreign passenger trade with America and South Africa The principal imports are cocoa, coffee, grain, fruit, and provisions, the exports, all kinds of manufactured goods.

(*f*) HULL with a movement of 6 million tons of over-sea shipping has a fine set of docks, and is one of the most progressive seaports Large quantities of cotton and woollen manufactures are exported, and imports are received from all parts of the world, but chiefly from the North Sea and Baltic ports

(*g*) GLASGOW (6 million tons movement) is second in population only to LONDON, and in the multifarious manufactures full advantage is taken of its favourable situation with regard to the Scottish **coal** and **iron** fields and to the

Atlantic The imports are very varied, ores being important, the exports are various manufactures

PORTSMOUTH and PLYMOUTH are great naval stations, and the head-quarters of the British fleet, the former having the largest Government dockyard in the world, the latter is a port of call for mail steamers ROSYTH on the Firth of Forth is a naval base for the North Sea

A great harbour for the Channel has been constructed at DOVER, which has become a naval station and a port of call for steamers from Germany to America At PETERHEAD, on the east of Scotland, the bay to the south of the town has been converted into a much needed national harbour of refuge in which vessels of any size can be secure in the worst storms

Imports and Exports The average value of goods imported into the United Kingdom during the ten years 1911—1920 was 1063 million pounds a year, or over £22 for every inhabitant, while the exports of British productions and manufactures amounted to 595 million There were also re-exports of imported goods to the value of 110 million pounds The total sum representing British trade is thus 1,768 million pounds, more than three times the trade of any other nation except the United States The imports are chiefly food and raw materials, the exports native productions and manufactured articles

Imports to Great Britain and Ireland, valued in million pounds

Class A *Food*	1900	1910	1920	Class B *Raw Materials*	1900	1910	1920
Grain and Flour	63	79	232	Raw Cotton	41	72	257
Sugar	19	26	73	Wool	24	37	93
Animals and Meat	47	49	142[1]	Metals	32	41	74
Butter, etc	20	27	30	Wood	28	26	82
Tea	11	11	27	Flax and Jute	10	11	33
Fruits	12	13	54	Rubber	10	26	27
Five other food materials	23	27	100	Four other raw materials	31	57	105
	195	232	658		176	270	671
Food and Raw Materials under 3 million pounds in value					42	45	150
Class C Articles of foreign manufacture					110	131	453
				Total Imports A + B + C =	523	678	1932

[1] Meat only

Exports from Great Britain and Ireland, valued in million pounds

Class A *Native Productions and their Manufactures*	1900	1910	1920	Class B *Manufactures of Foreign Raw Material*	1900	1910	1920
Coal and Fuel	39	38	120	Cotton manufactures	70	106	401
Iron and Steel	32	43	129	Woollen ,,	24	38	135
Machinery	20	29	63	Linen, Jute, etc	10	13	45
	91	110	312		104	157	581
Manufactures of less value than 10 million pounds					96	163	441
				Total Exports A + B =	291	430	1334

The above table, comparing the exports and imports of 1900, 1910 and 1920, deserves attentive study Generally speaking the exports of a country pay for its imports Thus the comparatively small sum which represents British exports as valued at the port of departure is increased by freight, trader's profits and the greater usefulness of the commodities when they reach other countries, until it balances the imports when we add the large share of the profit of transporting the goods of the world which falls to British shipowners

Origin and Destination of Trade About one-fourth of the imports comes from British dominions abroad, and nearly one-third of the exports are sent there, thus the Dominions and India are relatively more important as markets for manufactured goods than as fields for producing raw material One-quarter of British imports comes from the United States, but there is no such marked predominance of any one country in taking the exports

Trade of Great Britain and Ireland in million pounds

Country	Imports from			Exports to			Total		
	1900	1910	1920	1900	1910	1920	1900	1910	1920
Australia	36	60	112	27	36	62½	45½	66½	174½
India	27	43	96	30	46	181	57	89	277
Canada	22	26	93	8	20	42½	30	45½	135½
New Zealand	12	21	47½	5½	8½	26½	17½	29½	74
South Africa	4	10	19	13	19½	49	17	29½	68
Other Colonies	21	32	123½	29	43	96½	37	58	220
United States	139	120	563	20	31½	77	159	151½	640
Germany	31	41	30	28	37	22	59	78	52
France	54	51	76	20	22½	136	74	73½	212
Russia	22	43	33½	11	12	12	33	55	45½
Holland	31	40	39	11	13	47½	42	53	86½
Belgium	24	32	45	11	14	49	35	43	94
Egypt	13	21	69	6	9	43½	19	30	112½
Denmark	13	20	32	4	5½	31½	17	25½	63½
Spain	16	14	37	6	5	19	22	19	56
Sweden	11	11	56½	5	7	39	16	18	95½
Japan	2	5	29½	10	10	26	12	15	55½
Other countries	57	109	431	65	119½	474	122	228½	905
Total	523	678	1932½	291	430	1434½	814	1108	3367

In Great Britain there is almost free trade, there are no protective duties on foreign produce, and the customs duties, which amount to 100 million pounds a year, are concentrated upon a few clearly defined articles, tobacco, tea, sugar, and alcoholic liquors yielding nine-tenths of the revenue from this source

The population of the British Islands is ascertained by a census every ten years In 1921 it amounted to a little more than 47 millions, $4\frac{3}{4}$ millions of whom lived in Scotland, and $4\frac{1}{2}$ millions in Ireland[1] The population of *Ireland* has been decreasing steadily by emigration since the potato famine of 1846, that of *England* and *Scotland*, in spite of a higher death-rate, has been increasing The average density of population in the British Islands is 388 to the square mile The county of LONDON has a density of population of 39,000 to the square mile, over nearly half of Scotland there are less than 30 on an equal area Excluding towns of more than 10,000 inhabitants the density of population exceeds 400 to the square mile, only in Middlesex, Co Dublin, Lancashire, Renfrew, Durham and Surrey, and is less than 25 in Sutherland, Inverness, Argyll and Ross In consequence of the gradual extinction of domestic industries such as hand-loom weaving, and the continual reduction in the area of land cultivated, there is in progress a **concentration of population**, the rural population steadily diminishing, while the number of dwellers in large towns increases About 250,000 emigrants, a quarter of whom come from *Ireland*, leave the British Islands every year Since the War rather more than half the emigrants have gone to Canada and about one-third to the United States, the rest going mainly to British dominions

The people of Great Britain and Northern Ireland, although belonging to several different races, and governed to some extent by different laws, are bound together by a common language and equal political rights They are characterised by **perseverance, energy**, and independence beyond most nationalities **Education** is compulsory, but in technical instruction the workmen of some continental nations have as yet greater advantages The national vice of **drunkenness** has shown a marked decrease in recent years due mainly to the policy of liquor control adopted during the War

The only Government **restrictions on trade** or commerce are laws regulating the hours of labour, the employment of women and children, the loading of ships, the pollution of air and water by factory refuse, and some others, all calculated to increase the security and well-being of the people employed The principal duties of the **Board of Trade**, a department of Government, are the control of harbours, of shipping and emigration, the inspection of railway works, and enquiry into accidents, the testing of weights and measures, the collection of statistics bearing on the industries and commerce of the country, and the publication weekly of a *Journal*, with information about foreign markets and fields of supply Inspectors of mines, of

[1] No census was taken in Ireland in 1921

factories, and of explosives are appointed by the Home Office to enforce the various regulations passed by Parliament on these subjects The **buoys** and **lighthouses** of the English coast are under the charge of the Trinity House, those of Scotland and Ireland are under separate Commissioners In Scotland there is a **Board** to control and report on the **Fisheries**, while the fisheries of England are under the Board of Agriculture and Fisheries

There are two **Government monopolies**, the **Post Office**, to which the privilege of carrying letters is reserved, and the **Telegraph and Telephone Department**, with the sole right of electric transmission of messages There are 23,649 post-offices and 50,285 other receiving boxes in the United Kingdom, and there are 234,300 people employed in the postal and telegraph services Every person in the kingdom receives, on an average, 75 letters a year The Post Office also acts as a carrier for small parcels and conducts a large banking business, receiving sums down to 1*s* , on which interest is paid with Government security, the number of depositors in 1920 exceeded 13 million About 90,000 miles of line are in use for telegraphic purposes, and 87 million of messages are sent annually In most towns there are telephone exchanges Wireless telegraphy stations are maintained by the Post Office at various points round the coast, and telegrams are collected and delivered to and from ships at sea The foreign telegraph cables are, as a rule, the property of private companies, and the rates are consequently irregular

The coinage has gold as the standard, silver and bronze being used as tokens of value, the English banks issue notes of £5 and upwards, those of Scotland and Ireland employ also £1 notes, which were the smallest paper money in use before the war Since the withdrawal of gold coins, £1 and 10*s* notes issued by the Government have been in general use throughout the British Isles

The defence of the British Empire is provided for by a regular army of 225,000 soldiers, with twice as many to fall back on in the army reserve, the special reserve, and especially the territorial force, a means of defence peculiar to Great Britain The air force has an establishment of 31,000 men, an air force reserve and territorial air force The **navy** is the principal strength of the country, and has a twofold object, to *protect* the British Islands and overseas dominions from invasion, and to secure *the Command of the Sea*, so that merchant vessels may sail without fear of attack by an enemy, and that the supply of food from abroad, on which the United Kingdom is absolutely dependent, may never be cut off It consists (1922) of 29 battle-ships, 71 light cruisers including seaplane carriers, 205 destroyers, and 89 submarines The navy is manned by 100,000 sailors and marines In addition, the great passenger lines have agreed to provide a number of the largest and swiftest steamers in existence for service as armed cruisers in time of war, yet the war-navy bears a much smaller proportion to the navies of other powers, than the merchant ships of Great Britain bear to those of the rest of the world

IRISH FREE STATE (SAORSTAT EIREANN)

The Irish Free State occupies about six-sevenths of the whole of Ireland and comprises the Provinces of Leinster, Munster and Connaught and the Ulster Counties Cavan, Donegal and Monaghan It contains a central plain of rich grass land with many bogs and wide shallow lakes This is surrounded by a broken rim of mountains which yield fine granite on the north-west, and various metallic ores, including copper, in Wicklow, in the south-east The area of the State is 26,590 square miles, or 17 million acres, one-quarter of which is cultivated Oats, barley and wheat are the chief grain crops, and potatoes and turnips the principal root crops Of the cultivable land, two-thirds are pasture, horse-breeding is an important industry, and cattle, dairy-produce and pigs are the staple exports of CORK (102) and other ports

Thousand acres of the Chief Crops in 1922

Pasture grass	Oats	Barley	Wheat	Potatoes	Turnips
8350	814	176	34	401	199

Thousand Head of Live Stock in 1922

Cattle	Sheep	Pigs	Horses
4330	3070	920	310

DUBLIN (403), the capital and chief seaport, is also the principal centre of the brewing and whisky distilling industries COBH (Queens town), in the south, is the port where the Atlantic steamers from Liverpool land and embark mails

The Irish fisheries are valuable but suffer from defective transport The country is intersected with canals and waterways which if developed would be of great service for the carriage of goods Two canals, the Royal and the Grand connect Dublin with the Shannon

The Irish railway system spreads in all directions from DUBLIN The *Great Northern* line strikes north along the coast and then runs westward over the province of Ulster, uniting at BELFAST with the *Belfast and Northern Counties* line, now part of the English *Midland* system, which sends branches to all the coast towns on its way to LONDONDERRY The *Midland Great Western* runs west from DUBLIN to MULLINGAR, where it divides into two branches which fork successively and terminate at various towns on the west coast of Connaught from SLIGO to GALWAY The *Great Southern and Western* branches from DUBLIN over the south-west of Ireland to CORK and KILLARNEY, and is crossed at right angles by the *Waterford and Limerick* line which extends beyond LIMERICK toward the north-west and south-west The short line of the *Dublin, Wicklow and Wexford Company* runs southward along the east coast

CHAPTER VIII

DOMINIONS AND COLONIES IN ASIA

The Indian Empire —Configuration Climate Agricultural resources Minerals Manufactures Railways Seaports People Trade *Asiatic Colonies* —their resources, towns and trade Aden Ceylon Straits Settlements Federated Malay States Hong-Kong British Borneo *Mandated Territories in Asia* —Iraq, Palestine

The British Dominions beyond the Sea have different degrees of independence The Empire of India is ruled by a Governor-General or viceroy, acting under the Secretary for India (who is a member of the British Government) and governing the various provinces with the aid of an elected Council of State and Legislative Assembly Native dependent princes exercise a certain amount of power The Secretary for the Colonies is responsible for Crown-colonies, usually tropical possessions, which contain a great majority of native or coloured inhabitants, and administers them through governors whom he appoints he has also control over the officers of some colonies which have representative Parliaments such as Malta and Ceylon All the highly-developed British settlements, including Canada, South Africa, New Zealand, and Australia, have responsible Parliaments, over which the home Government has no control whatever, the appointment of governors having the right of veto on any bill passed by a dominion Parliament being the only mark of authority imposed There is as yet no commercial unity in the British Empire, he systems of money and of taxation differ widely, and most of the dominions impose protective duties on manufactures but allow reductions to other British possessions and the mother country

THE INDIAN EMPIRE

Configuration The Indian Empire comprises the great peninsula of Asia between the Arabian Sea and the Bay of Bengal, and the strip of country bounding that gulf on the east; it has a total area of $1\frac{3}{4}$ million square miles, or more than 14 times that of the British Islands In the north the vast range of the **Himalayas** runs like a wall from north-west toward south-east, dividing India from the high plateaus of Central Asia The parallel mountain chains that run from north to south through Burma unite with the eastern extremity of the Himalayas to shut in the fertile valley of Assam South of the Himalayas a wide **Plain** stretching across the peninsula is traversed by three great river systems, fed by the melting Himalayan snow The *Indus* flows into the

Arabian Sea across the Punjab on the west The *Ganges*, with many tributaries, flows for 1500 miles south-eastward and interlaces with the *Brahmaputra* from the Assam valley, in a vast delta at the head of the Bay of Bengal These rivers, although constantly changing their channels, and liable to uncontrollable floods, are the life of the region, their silt spread over the inundated land forms soil of wonderful fertility, and by means of a network of irrigation canals they distribute moisture to thousands of square miles of cultivated fields, where the rainfall is insufficient The great plain is bounded on the south by the Vindhya Hills forming the base of a triangular plateau, the **Deccan**, diversified by many hills and valleys and enclosed, parallel to the coasts, by the Eastern and Western Ghats, which converge and unite in the south The *Irrawaddy* in Burma is the only important navigable river, except those of the Great Plain, steamers being able to run on it for 700 miles from the sea to BHAMO

The climate is tropical at sea-level, but the air on the hills is much cooler The rainfall depends on the *monsoons*, winds which, speaking generally, blow dry during the winter months from the cold uplands of Asia, and in summer come laden with vapour from the warm Indian Ocean It varies from about 600 inches a year on the Assam hills to less than 5 inches in the Indian Desert, on the western side of the peninsula The Deccan and the Punjab are on the whole dry, and are subject to periods of drought and famine, which Government irrigation works have considerably reduced

Agricultural resources India is essentially an agricultural country, in no other part of the world does so great and dense a population depend so completely on the fruits of the earth

Millet, in two chief varieties known as *joar* and *bajra*, is cultivated over the entire peninsula and occupies eight-tenths of the food area in part of the Deccan **Rice** is grown principally on the Ganges plains, and on all the river-deltas round the Bay of Bengal, it forms the only food of more than 90 million people *Bengal* raises considerably more than half the Indian crop, there being two harvests in the year The name of PATNA, one of the collecting stations on the Ganges, is often associated with the grain in Europe, but

most rice is exported to European ports from RANGOON. **Wheat** is important only in the dry regions of the *United* and *Central Provinces*, and the *Punjab*, but there it is now the chief food-grain produced About 28 million acres in India are under wheat, 80 million under rice, and as much as 100 million produce millets, or other food-grains Irrigation canals serve 23 million acres of land, and in many places two harvests are obtained each year

Cotton is the staple industrial plant, occupying about 20 million acres The most important regions of production are the plains of Gujarat in the north of *Bombay* Presidency (where SURAT gives its name to Indian cotton in the British market), and the *United* and *Central Provinces*, whence the crop is forwarded to BOMBAY MIRZAPUR, the head of navigation on the Ganges, was an important cotton market, but has declined as a cotton centre, while CAWNPORE has steadily increased in importance, since railways superseded river-steamers Smaller quantities are grown in *Madras* and in other parts of India **Jute** is confined to the rich plains of northern and eastern *Bengal*, CALCUTTA is the chief centre of its collection and export, but shipments are also made at CHITTAGONG **Tea**-growing has its headquarters in the valleys of *Assam* and the north-east **Tobacco**, although not a great export, occupies twice as much land as the tea-plant **Indigo**, formerly more important, is still a valuable crop in *Bengal* and the north of India, chiefly in Behar **Poppies** are grown under Government restrictions in the Ganges valley, where the **opium** manufacture is confined to PATNA and GHAZIPUR, and the drug shipped at CALCUTTA The manufacture of opium is free in the fertile plateau of Malwa in Central India, and the tax is levied on it when the finished product comes into *Bombay* Throughout the greater part of India the growth of opium poppies is absolutely prohibited **Cinchona**, **hemp** (chiefly for its intoxicating resin, *bhang*), **flax**, **coffee**, **sugar-palms**, and **fruit** are amongst the cultivated plant productions of minor importance **Oil-seeds**, such as mustard (rape), cotton, and linseed, are largely grown for export, the area under them exceeding 14 million acres

Much of the hill-country remains under **forest**, the woodlands are carefully controlled and timber-cutting regulated by Government The most valuable wood amongst the 2000 species of forest trees is **teak**, chiefly obtained from *Burma* and the Western Ghats, and next to it comes **sal**, which flourishes on the lower Himalayas and the north of the Deccan

Cattle, of which there were 156 million in 1920, and **sheep** to the number of 22 million, are the chief live-stock Horned cattle do most of the agricultural work, and are usually in a wretchedly poor condition from the scarcity of pasturage, land being too valuable to be left under grass About half of them are the gentle, cream-coloured, humped oxen or *zebus*, the remainder being the less tractable but more hardy black *buffaloes*, which are most numerous in the marshy delta-lands **Silkworms** are cultivated to a small extent in lower *Bengal*, and **tussar silk**, the less valuable cocoons of several species of wild caterpillars, is also collected The **fisheries** of *Burma* are the most valuable in the East, and as the salt-tax in that province is low, cured fish is exported

Minerals Over 12 million tons of **coal** are raised annually in India, nine-tenths of it from the collieries of RANIGANJ in the Damodar valley, whence it is sent to CALCUTTA and used for the local railways and steamers It has the disadvantage of a large proportion of ash BOMBAY and MADRAS import coal from England **Iron** occurs plentifully, but is little worked **Gold, copper**, and **diamonds** in Central India, **rubies** in *Burma*, and **petroleum** and **wolfram** are obtained The **salt** trade, as in many Eastern countries, is a Government monopoly, and it is a crime for a native to boil down sea-water or gather saline incrustations from the shore The supply comes from the rock-salt hills of the Salt Range in the *Punjab*, worked chiefly in the Jehlam district, from salt pans evaporating sea-water all round the coast, from inland salt-lakes, and by importation from England

Manufactures The villages of the north and the native states in the Deccan have long been celebrated for the beauty and delicacy of the cotton and silk fabrics woven by the people in their own dwellings, but this domestic industry is

now much reduced **Jute-weaving** and the manufacture of gunny bags by hand are largely carried on in the villages of north-eastern *Bengal* **Metal-work**, chiefly in the shape of cheap ornamental articles for the London market, still flourishes at the holy city of BENARES on the Ganges, and coarse pottery, jewellery, filigree work, inlaying, and wood and ivory carving are carried on in many places **Carpet** and **shawl**-weaving employs numerous scattered villages There are many large **factories** on the European pattern with steam-machinery for **cotton** in BOMBAY and for **jute** in CALCUTTA

Railways India contains about 37,000 miles of railways, most of which belong to Government or are under Government control, and there are over 92,000 miles of telegraph line and 22 wireless stations MADRAS is the centre of the South Indian railways and sends off three chief lines, one along the coast southward through the small French colony of Pondicherry and on to TUTICORIN and TINNEVELLY, another south-westward through the Palghat Gap to CALICUT, branching through the important manufacturing city BANGALORE, and on to Goa in Portuguese territory A more important line runs north-westward along the valleys of the Deccan through the Bhor Ghat direct to BOMBAY, with a branch to HYDERABAD (500), the capital of the Nizam's dominions From BOMBAY a railway uns north-east along the Narbuda valley to ALLAHABAD on the Ganges, where it joins the main line from the north-west frontier to CALCUTTA Another passes eastward through NAGPUR, a cotton nd rice centre, and the fertile wheat-growing plain of Chhatisgarh o CALCUTTA, furnishing the shortest railway route between the wo great seaports A line to the north connects BOMBAY with the otton and wheat fields of Gujarat, and is continued through Rajputana to AGRA, a great collecting centre of agricultural produce n the Jumna, and to DELHI, the capital CALCUTTA is the erminus of the whole railway system of Northern India which runs i a long network parallel to the Ganges, connecting the great cities of ie Plain, and extended to PESHAWAR on the extreme north-western ontier at the mouth of the Khyber Pass Numerous narrow-gauge ies branch from these railways to north and south, one of these being 2-foot gauge railway to the Himalaya health-resort of DARJEELING he wheat-district of the *Punjab* is opened to the sea by a line from AHORE, an important junction with the northern railways, down e Indus valley, passing MULTAN, to the port of KARACHI From is line the Sind-Pishin Railway runs westward to SIBI, from which o lines reach QUETTA in Baluchistan, one through the Bolan Pass, e other through the Khojak tunnel, 2½ miles long The roads, hough no longer required as main arteries for commerce or military

transport, are maintained in good order for local purposes Land communication between India and neighbouring countries is still but little developed on account of the difficulty of the mountain passes Some trade is however now being established with Tibet The northern frontier trade flows chiefly through the Khyber and Bolan Passes to Afghanistan and Persia on the west, up the Brahmaputra on the east, and into the independent states of the southern Himalaya slopes

Seaports India, with a sea-board of more than 9000 miles, has few harbours KARACHI (*Kurrachee*, 217), on the western frontier, ships much of the *Punjab* wheat

BOMBAY (1176), 500 miles south-east of KARACHI (6300 miles or 19 days from Plymouth by the Suez Canal), has the best harbour in Southern Asia The town, built on an island connected with the mainland by roads and railways, dates its prosperity from the failure of the American cotton crops during the civil war It now contains many steam cotton mills, with two-thirds of all the cotton spindles at work in the Indian Empire The manufacture has developed by the energy and capital of natives, chiefly of Parsis, and in the coarser varieties of cloth it competes successfully with Manchester The chief exports are raw **cotton**, most of which goes to the continent of Europe, wheat and oil-seeds

MADRAS (527), on the eastern or *Coromandel* coast, is the third commercial town of India, and has several small manufactures Ships formerly anchored off the shore, and passengers and goods were landed in surf-boats, but great efforts have been made, in spite of many difficulties from the heavy surf, to construct a harbour, which, although not fully satisfactory, facilitates landing

CALCUTTA (including suburbs, 1327) is the greatest port, doing nearly half the sea-trade of India It is 3400 miles or 11 days from BOMBAY by sea, and 1500 miles by rail The city stands 86 miles up the rapid and ever-varying Hooghly river, the most westerly mouth of the Ganges This situation is central for the commerce of *Bengal* and *Assam*, and communication is easy by railway and river with all the great produce-collecting cities of the Plain, the **rice**, **jute**, **tea**, opium, and indigo of which it exports The manufactures of the city are extending

RANGOON (342), on the delta of the Irrawaddy, is the chief harbour of *Burma*, and exports great quantities of rice from the low-lying cultivated coast-lands, and teak-wood from the forests of the interior Railways run from Rangoon to PROME on the Irrawaddy and to MANDALAY (149), farther up the river, beyond which the line extends to MYITKYINA.

These five seaports carry on between them nineteen-twentieths of the foreign trade of India CALCUTTA and BOMBAY together conduct more than three-quarters of the sea-borne commerce, which as a rule is with Europe by the Red Sea and Suez Canal, although there is increasing intercourse with China, Australia, and East Africa

People In 1921 the population of India was 318 million, including members of many different races, speaking more than a hundred languages More than two-thirds are *Hindus* in religion, and one-fifth *Mohammedans* Nearly 5 million are Christian Population is densest in the rich agricultural region of the Ganges plain, where in many parts of *Bengal* the density reaches 1200 per square mile without any concentration in large towns The people are as a rule village dwellers, in all India there is about the same number of towns exceeding 50,000 inhabitants as in the United Kingdom, which has only one-seventh of the population, and these large towns are almost entirely confined to the Great Plain The non-military British-born residents in India number only 100,000 There are 75,000 British troops and 160,000 natives in the army

Trade In 1920—21 the *exports* from India were valued at 267 million tens of rupees[1], jute and cotton were the two chief articles, then followed grain, seeds, tea, hides, lac, and wool Only one-quarter of these exports go to Great Britain, which however sends over half of the *imports*, the total value of which amounted to 347 millions More than one-third of this represented Manchester cotton goods, the other principal articles in order being machinery, metals and manufactures of them, locomotives, wagons, paper, motor-cars, and woollen goods In addition a large quantity of gold and silver is annually brought into India as payment for the excess of the exported over the imported goods There is a small export duty on rice which scarcely restricts the trade, but except for the heavy tax on salt and duties on alcoholic liquors, arms and ammunition, the import trade is free unless duties are imposed on special occasions in order to make up the revenue Silver is the standard for coinage, and the unit is the rupee, nominally worth 2*s* The value of the rupee is always fluctuating, but it is now practically fixed at 1*s* 4*d* Government issues notes of values from 5 rupees to 10,000 The depreciation of silver makes £1 in

[1] In India a "ten of rupees" corresponds to £1 in Great Britain

gold worth about 15 rupees in silver, hence the export of wheat and other commodities from India is favoured to a considerable extent The unit of weight is called a *maund*, but the standard differs, being 82 lbs in Bengal, 28 in Bombay, and 25 in Madras In order to secure uniformity the metric system has been legalised, the name *kilogramme* being changed to *ser*

ASIATIC COLONIES

ADEN with Perim on the Gulf of Aden is a fortified coaling station under the jurisdiction of the Bombay Government The fortified rock of **GIBRALTAR** at the southern extremity of Spain, commanding the entrance to the Mediterranean, and **MALTA**, an island between Sicily and Africa, although in Europe, are of value mainly in securing the route to India by the Suez Canal All three are military and naval stations garrisoned by British troops

CEYLON, a tropical colony with representative government, is almost entirely devoted to planting **Tea** is the chief object of cultivation, and in 1921 the tea exported was equal in value to one-third of the total exports **Coco-nuts** and products yielded by them are next in importance, then come **rubber, areca nuts, cocoa, cinnamon**, and **plumbago** Rice is cultivated for native use, and tobacco and coffee are also grown. The only mineral products are plumbago (graphite), monazite, precious stones, and a little gold TRINCOMALEE, on the north-east coast, is a fine harbour and head-quarters for the British Navy, COLOMBO (244), protected by a breakwater and connected by rail with KANDY, is the capital and first commercial town, and is now, what GALLE at the southern extremity of the island was formerly, the chief port of call for Indian and Australian steamers. The Gulf of Manar and Palk Strait (where pearl-oysters abound) separating Ceylon from India are too shallow to admit large steamers, which must consequently pass to the south of the island.

The **STRAITS SETTLEMENTS**, a Crown colony, comprise the island of Singapore (with its dependencies), Penang (including Province Wellesley and the Dindings), Malacca, the

Cocos or Keeling islands, Christmas island, and Labuan SINGAPORE (180), the seat of government, is a very busy seaport, being the most important halting-place for vessels passing to and from the Far East, and doing a great trade in collecting and distributing the produce of the neighbouring states and islands, **tin, rubber, spices** (including **pepper**), **gambier, gums, tapioca**, rattan canes, gutta-percha, etc The chief imports are rice, cotton goods and opium for the large Chinese population who do most of the work in mines and plantations. It is strongly fortified, and of great strategic value as a naval base, as it commands the Strait and all the shipping between Europe and China

The **FEDERATED MALAY STATES** of **Perak, Selangor, Negri Sembilan**, and **Pahang** form a British Protectorate, and they are commercially valuable because of the **tin** and gold they export and their tropical forest produce In addition to the territories comprised in the Federated Malay States, the British sphere in the Malay Peninsula includes the States of Johore, Kedah, Perlis, Kelantan, and Trengganu

The small island of **HONG-KONG**, off the mouth of the Canton river in China, contains a magnificent harbour, along the shore of which extends the town of VICTORIA, which does a very heavy transit trade between Chinese ports and the outer world, the movement of the port being nearly equal to that of Liverpool or London The exports and imports consist of **tea, silk**, hemp, copper, etc from China outward, and of British **textile fabrics, opium**, and iron manufactures from western ports to "the flowery land" At Singapore and Hong-Kong the *picul* of 133 lbs is the standard of weight, and the silver dollar, worth *2s 4d*, is a coin in common use, though British and Chinese currency also circulate Both ports are free, except as regards importation of intoxicating liquors The opposite peninsula of Kowloon, on the mainland, forms part of the Colony

BRITISH BORNEO includes the northern parts of the island, which are under the control of the *British North Borneo Company*, where SANDAKAN is the chief town, and

also the protected states of **Sarawak** and **Brunei**. The productions are chiefly those of plantations, timber, **tobacco** and rubber, as well as pepper, gambier, camphor, etc. being exported. Coal, iron and mineral oil have been found. Railways are being pushed into the interior. A characteristic export is that of edible birds' nests to China.

MANDATED TERRITORIES IN ASIA

Iraq (*Mesopotamia*). The British Mandatory Sphere comprises the former Turkish vilayets of Mosul, Baghdad and Basra and consists mainly of the plain traversed by the Euphrates and Tigris. The soil is rich and agriculture is being developed by means of irrigation. Wheat, barley, dates, and rice are grown. Sheep are reared in the Kurdish hills and round Mosul in the neighbourhood of which there are petroleum wells. BAGHDAD (200) on the Tigris conducts caravan trade with Persia and the Black Sea and has steamer and railway communication with BASRA the chief seaport on the Shatt-el-Arab near the head of the Persian Gulf. A service of motor cars across the desert has been established between Baghdad and Damascus.

Palestine lies between the North Arabian desert and the Mediterranean Sea. It is essentially an agricultural country. The soil is generally fertile and cereals, olives, grapes and oranges are grown, while sheep and goats thrive both in the maritime lowland and in the mountains of the interior. Limestone occurs all over the country, and rock-salt is obtained in the Jordan valley and on the shores of the Dead Sea. JERUSALEM, the capital, is connected by rail with the ports of JAFFA and HAIFA and there is through communication with the railways of Syria and Egypt.

CHAPTER IX

AUSTRALASIA

Commonwealth of Australia —climate, resources, people and trade, means of communication The states, their resources, trade, towns and railways Victoria New South Wales Queensland South Australia and Northern Territory Western Australia Tasmania *Dominion of New Zealand* Papua Fiji Statistics of Australasia *Mandated Territories in the Pacific* —New Guinea Samoa Nauru

AUSTRALIA The continent of Australia together with the island of Tasmania form the Commonwealth of Australia, a federation of which each state has a separate legislature for local affairs The land on the east side is fertile and well watered, barred from the grassy table-lands and dry sandy plains of the interior by the Dividing Range of mountains The continent is lacking in internal water communication The long river Murray and its tributaries are navigable for small steamers only in the rainy season. The **climate** is variable, long droughts sometimes occur, causing the death of millions of sheep, and on the eastern slope there are often disastrous floods In the summer months—November, December, and January—all parts of Australia are hot, but not unhealthy, in winter—May, June, and July—the islands of Tasmania and New Zealand are wet and sometimes cold with occasional snow, but the continent, although subject to severe rains on the eastern slope, is warm The rainfall in the interior is very small and some of the country is arid desert.

Resources The chief mineral production hitherto has been **gold**, of which more than 42,000 tons, worth 605 million pounds, have been raised since mining began in 1850 **Silver, copper, coal, lead,** and tin are also of great importance **Wheat** is the staple grain crop in the south, **sugar** and **maize** occupy most land in the tropical northern districts The magnificently grassed plains west of the Dividing Range make the rearing of **sheep** the typical industry, and as most of them are merinos, **wool** of the finest quality is the chief Australian export Dairy farming has recently attracted attention, and Australian butter s now received in London All varieties of **Eucalyptus** trees abound

People and Trade The entire population of Australia amounted in 1921 to nearly 5½ million, the average density being 1¾ to the square mile, but the two largest towns contain one-quarter of the population of the Commonwealth There are about 60,000 aborigines, most of he people are of British descent, Germans rank next, and there is a

variable number of Chinese and *kanakas* (or Pacific Islanders) as labourers The settlement of Chinese is discouraged by the imposition of a very heavy tax on each immigrant There are uniform import duties usually for the purpose of encouraging local manufactures, the whole Commonwealth having free trade internally The coinage, weights and measures are those of Great Britain, branches of the Royal Mint in Melbourne and Sydney coin sovereigns and half-sovereigns

Means of Communication Nearly all the railways belong to the Government, but as the gauge differs in each state, through transport of goods is impossible The telegraph system is complete It extends from New Zealand by a cable to Sydney, by overland lines almost completely round the coast, across the continent from Adelaide to Port Darwin, and two cables *viâ* Java unite with the Indian and European lines An all-British cable also unites Australia with Canada across the Pacific, thus securing communication with Great Britain by an eastern as well as a western route Wireless telegraph stations are in operation in all the State capitals The *Peninsular and Oriental Company's* mail steamers and those of the *Orient* and *Australian Commonwealth lines* to Melbourne by the Suez Canal, Colombo and Western Australia (a distance of 12,500 miles), take letters on board at Port Said which are delivered in Melbourne within a month from leaving London *viâ* Brindisi The *New Zealand Shipping Company's line* to New Zealand by direct steamers *viâ* the Panama Canal carry mails in 35 days The *British India Company* carry mails *viâ* the Suez Canal and Torres Strait to Cooktown in Queensland in 44 days Mails are also sent through America, across the Pacific from San Francisco, taking 35 days from London to Sydney Another route from Vancouver in British Columbia in connection with the Canadian Pacific Railway takes about 33 days from Liverpool to Sydney, and this time can be shortened when faster steamers are employed

The state of **Victoria** occupies the south-eastern corner of Australia, and is mountainous except in the north It is well watered on the east and along the northern frontier, which is marked for 600 miles by the river Murray, but in the north-west irrigation works are necessary for agriculture, which is the main industry It is the second **gold-mining** state, and industries of all kinds are developing in most of the towns MELBOURNE (795), the capital and chief seaport, is situated on the Yarra-yarra river at the head of Port Philip Bay. Vessels drawing 22 feet of water can get up to the city wharves at high tide, larger ships take in cargo at PORT MELBOURNE and other harbours on the bay. The chief trade of the town is the export of **wool** and **gold**, but it

contains numerous woollen mills, engineering works, and manufactories BALLARAT (38), a busy industrial town about 70 miles west of MELBOURNE, is the chief centre of the Victorian gold-fields and ironworks, and makes all the locomotives for the state BENDIGO (100 miles north-west of Melbourne and an important railway junction), formerly called *Sandhurst*, is also a great centre of gold-mining, and wine is made from the fine grapes of the district GEELONG, a seaport on Port Philip Bay, doing a large export trade in wool, is the head-quarters of Australian wool-weaving, and contains large tanneries, paper-mills, and rope-works

The railway system branches out from MELBOURNE towards the west and north, over the mining and agricultural regions One junction is made with the system of South Australia at SERVICETON, and one with that of New South Wales at WODONGA, 190 miles from MELBOURNE, and 390 from Sydney From ECHUCA, the northern terminus of one line, and the chief port on the Murray for light-draught river-steamers, a private railway runs north into New South Wales to DENILIQUIN in the centre of the Riverina district, and by this route a considerable proportion of the wool and other produce of Riverina reaches Melbourne Two railways toward the east traverse the rich cattle district of *Gippsland*

The state of **New South Wales**, north of Victoria, is the oldest settlement, dating from the arrival of convicts in 1788 There are **gold**, **copper**, and **tin** mines in several places, **iron** is worked at LITHGOW in the Blue Mountains, and the great **silver** mines at BROKEN HILL and SILVERTON on the borders of South Australia, connected by rail with Adelaide, are among the most productive in the world **Coal** of very fine quality extends over large areas and ensures a brilliant future o the state **Cane sugar** is manufactured at GRAFTON, a seaport on the Clarence river in the north, where maize-growing is the chief form of agriculture **Sheep**-raising is the staple industry.

SYDNEY (905), the capital, is built on the shores of the many-armed natural harbour of Port Jackson, which offers unequalled advantages for shipping **Wool** is the chief export, and there are manufactories of many kinds, great engineering works and shipbuilding yards, with docks for repairing the largest ocean-steamers. PARAMATTA, at the

head of Port Jackson, is surrounded by the **orangeries** and orchards of a rich fruit-growing district NEWCASTLE (88) stands at the mouth of the Hunter river, and rivals SYDNEY in the amount of its exports, although the harbour is not so good The **collieries** of this state employ about 20,000 men, and yield about 9 million tons of coal a year, much of which is exported to other parts of Australia, Southern Asia, Chile, and San Francisco WENTWORTH, at the junction of the Murray and Darling, is a station for steamer traffic during the wet season

Three main **railway** lines diverge from SYDNEY The *Great Southern* with several branches passes through GOULBURN and connects with the Victorian lines on the Murray at ALBURY or Wodonga The *Great Western* climbs the Blue Mountains by a series of zig-zags, and runs north-westward through BATHURST across the cultivated and pastoral plateaus and plains to BOURKE on the river Darling, 500 miles from SYDNEY The *Great Northern*, passing through NEWCASTLE, meets the Queensland line from Brisbane at JENNINGS on the frontier north of TENTERFIELD

The state of **Queensland** is the most northerly, and has a tropical climate, dry in the interior but well watered on the coast The chief crops are **maize** and **sugar**, in cultivating which the labour of Chinamen and South Sea islanders or *kanakas* is largely employed **Gold**, **copper** and **tin** are the principal minerals, but **coal** is abundant Wool, meat, butter, and cheese, hides and skins, and tallow are the chief exports in order of value **Cattle**-breeding is important

BRISBANE (209), the capital, on Brisbane river in Moreton Bay, has a large shipping trade and wool export IPSWICH, 24 miles distant, contains tweed-mills, coal-mines, and limestone quarries, and is a station on the *Southern and Western railway* This line runs west for 400 miles through a pastoral country to CHARLEVILLE, where a famous artesian well has been bored for irrigation, and thence southward The agricultural centre WARWICK and the tin-mines of STANTHORPE lie on the railway from Brisbane to Sydney ROCKHAMPTON on Fitzroy river, next in population to BRISBANE, is the chief harbour of Central Queensland, exporting **frozen meat** and the produce of the gold, copper, and grazing district,

through which the *Central railway* runs westward This line marks the division between temperate Queensland to the south and tropical Queensland to the north It is the outlet of the famous **Mount Morgan** gold-mine TOWNSVILLE, the port whence the *Northern railway* runs, has meat-freezing and soap-works, and exports gold from the CHARTERS TOWERS fields COOKTOWN, 1000 miles from BRISBANE, owed its rise to the Palmer river gold-diggings, but **tin**-mines are now more profitable, **sugar** and **rice**-growing are extending, and there is a large fishery of **pearl shells**, clams, and trepang (sea-slugs) MARYBOROUGH (port of the Gympie gold-fields), BUNDABERG, and MACKAY are **sugar**-making coast towns with short lines of rail running inland to gold and tin mining districts HERBERTON in the north has large **tin** and also silver-lead mines, and a railway communicates with CAIRNS on the coast The great **Barrier Reef** of coral lies along the east coast of northern Queensland about 30 miles off, affording a smooth channel for coasting steamers in all weathers

The state of **South Australia** together with the **Northern Territory** separate the three long-established eastern states from Western Australia A great part of it is nearly rainless desert The southern coast-lands about Spencer Gulf and Gulf St Vincent produce more **wheat** than any other Australian state and contain **copper** and other minerals The northern coast with the exception of PALMERSTON on Port Darwin, a coaling station and terminus of the overland telegraph line, is almost uninhabited Government irrigation works fertilise hundreds of square miles of otherwise barren land, and **camels** are used for keeping up communication between these artificial oases and the railway, and also for farm work **Wine-making** is an important industry, the chief exports being wheat, wool, copper and wine. There are foundries and agricultural implement factories in several towns

ADELAIDE (255), the capital, stands six miles from PORT ADELAIDE on Gulf St Vincent **Wool** and **wheat** are the chief cargoes shipped A railway runs to the south-east, making a junction with the Victorian system The main

line runs north for about 250 miles with branches east and west through the copper districts, and one to Silverton, N S W, and meets the *Great Northern* line from PORT AUGUSTA, at the head of Spencer Gulf, passing due north to OODNADATTA, 700 miles from ADELAIDE on the overland telegraph line From PALMERSTON on the north coast a railway has been made south for 200 miles to Emungalan In time these two lines may meet and allow an overland mail route to be established WALLAROO, on Spencer Gulf, ships **copper** and ore from the *Wallaroo* and *Moonta* mines, and has large smelting works

The state of **Western Australia** has been undergoing rapid development in consequence of discoveries of **gold**, the output of which is now the greatest for any Australian state Lead and copper mines are also worked to some extent, and there are important deposits of coal in the south-west of the state, **timber**, especially jarrah, karri, and sandalwood, are exported in quantity, and there are **pearl-shell** fisheries in Sharks Bay and off the north-west coast The northern districts are favourable for stock-rearing Agriculture is extending, wheat, vines, and fruit being the principal crops, and silk culture is also attracting attention PERTH (54), the capital, is 12 miles inland from FREMANTLE, its port ALBANY on the south coast, 260 miles from PERTH by rail, has a sheltered harbour COOLGARDIE and KALGOORLI, and BOULDER in the interior, have become great gold-mining centres The country is so dry that water has had to be conveyed to them in pipes for 300 miles from the hills near Perth.

The state of **Tasmania** is an island resembling England in climate and scenery **Coal** occurs abundantly, and is worked at FINGALL on the east of the island and in the vicinity of HOBART **Tin** is mined at MOUNT BISCHOFF in the north-west and at other places, and the ore sent to LAUNCESTON by rail to be smelted Gold-mines are worked and silver is found at Mount Zeehan near Macquarie Harbour on the west coast **Stone** is quarried, and exported to Melbourne for building Silk culture has recently been established The

island is rich agriculturally, and grows large quantities of **hops** and **fruit**, brewing and jam-making having become leading industries There are woollen factories, flour-mills and other works in the chief towns

LAUNCESTON (26), a seaport 40 miles from the north coast on the river Tamar, is connected by 130 miles of railway with HOBART (52), the capital and chief seaport of the state on a fine inlet of the south coast Both towns have steam communication with Melbourne and Sydney, and British mail steamers to New Zealand call at HOBART.

DOMINION OF NEW ZEALAND

The Dominion of **NEW ZEALAND** consists of three main islands, North, South, and Stewart Islands, and several groups of smaller islands The two largest, North and South Islands, separated from each other by Cook Strait, lie about 1200 miles south-east of Australia **Gold** and **coal** are abundant, silver, antimony and manganese are also profitably mined **Timber** is of value, especially the **kauri pine**, the fossil gum of which is exported *Phormium* or native flax furnishes a strong fibre, which is manufactured into coarse cloth and ropes The chief crops are **oats** and **wheat** **Sheep** and **cattle-breeding** is molested, as in Australia, by **rabbits**, 14 million skins of which were exported in 1921 **Meat** preserving is one of the special industries, 216,000 tons of refrigerated mutton valued at over 11 million pounds having been exported in 1921 **Manufactures** of all kinds have developed, and are assisted by protective duties. Dairy-farming is a flourishing industry, and butter and cheese are exported, principally to the United Kingdom.

Railway extension is proceeding rapidly in spite of great engineering difficulties, most of the lines belong to the State In North Island a line from WELLINGTON runs north-east to NAPIER on Hawkes Bay, a port for shipping timber, wool and meat, another goes north-west to NEW PLYMOUTH, and a line extends north to AUCKLAND A branch of the Auckland line runs up the Thames valley toward GRAHAMSTON, a centre for gold-mining

AUCKLAND (164), the chief industrial and commercial town in North Island, stands on a fine harbour of the

east coast, separated by an isthmus six miles wide from a similar indentation on the west coast. Steamers run to Australian ports, Vancouver, and San Francisco Farther north RUSSELL, on the Bay of Islands, was a station for whalers. Coal is exported from KAWAKAWA WELLINGTON (111), on Cook Strait, now the capital of New Zealand, keeps up direct steam communication with Australia. It contains wool mills, and very extensive meat-freezing and preserving works. A number of native Maoris live in North Island, and these have in most cases become intelligent citizens.

In South Island CHRISTCHURCH (110), a commercial town on the east coast, with the port of LYTTELTON, is a railway centre, the lines spreading through the surrounding pastoral and agricultural country, and running southward through OAMARU, the outlet for the chief grain district, and DUNEDIN to INVERCARGILL at the southern extremity of the island. DUNEDIN (73), the second commercial town of South Island, is accessible to steamers drawing 18 feet, larger ships lying at the harbour of PORT CHALMERS, nine miles distant It is the centre of a gold-mining region and has numerous manufactures, including woollen goods and machinery. There are few towns on the steep western slope, but the best **coal-mines** are at GREYMOUTH in the north-west, which is reached by a railway from CHRISTCHURCH.

PAPUA (British New Guinea), a dependency of the Commonwealth of Australia, occupies the south-eastern part of New Guinea, an island with a tropical and unhealthy climate. The physical features of the colony are favourable to agriculture, which is successfully carried on in the settled districts; and numbers of natives are engaged in industrial pursuits **Coco-nut, rubber, sisal hemp** and **coffee** are the chief products. Gold-mining and pearl-shell fishing are important industries Steamers trade fortnightly between PORT MORESBY, the residence of the Governor, and Sydney.

The **FIJI** Group, an archipelago of at least 100 inhabited islands, lies about 2000 miles east of Queensland The principal products are **coco-nuts** (the dried kernel of which is exported as **copra**), **sugar**, which is very extensively cultivated, coffee,

maize, cotton, and all kinds of tropical fruit The capital, SUVA, on the south coast of Viti Levu, the largest island, possesses a fine harbour The former capital LEVUKA on the islet of Ovalau is of nearly equal importance commercially Labour for sugar plantations is supplied as in Queensland by *coolies* brought from India and *kanakas* from various Pacific islands, this traffic, which has been greatly abused, is under strict Government supervision

Statistics of Australasia, 1921

	Area[1] sq m	Pop[1] (1921)	Density	Govern-ment	Time[2] p m	Exports[3]	Imports[3]
Queensland	670	758	1 1		10 0	15	12
New S Wales	310	2102	6 7		10 0	47	72
Victoria	88	1532	17 4		9 30	35	58
S Australia†	904	499	0 5		9 0	18	12
W Australia	976	332	0 3		8 0	12[7]	15[7]
Tasmania	26	214	8 2		10 0	1	2
COMMON-WEALTH	2974	5437[4]	1 8	Respons	—	128	171
New Zealand	105	1219[5]	11 6	,,	11 30	44	43
Papua	90	275[6]	3	Crown		0 2	0 5
Fiji	7	157	22 4	,,	12 0	2 5	1 5

[1] Thousands
[2] At Capital, Greenwich noon.
[3] Million pounds
[4] Excluding aborigines
[5] Excluding Maoris
[6] Estimated
[7] Including inter-state trade
† Including Northern Territory

MANDATED TERRITORIES IN THE PACIFIC

The Territory of **New Guinea** which includes the possessions formerly held by Germany in the Pacific, namely, Kaiser Wilhelm's Land, Bismarck Archipelago, the German Solomon Islands has been assigned to Australia The territory is almost entirely dependent upon the cultivation of coco-nuts for the manufacture of copra which is exported

The Territory of Western Samoa, formerly the German Samoan Islands, is now administered by the Government of New Zealand It exports copra and cocoa-beans

Nauru Island exports phosphate and has a wireless station

CHAPTER X

DOMINIONS AND COLONIES IN AFRICA

South Africa, physical conditions *Union of South Africa* Cape of Good Hope, towns, trade, and communications Natal Orange Free State Transvaal South-West Africa *Rhodesia* Nyasaland Mauritius *Colonies on the West Coast* Nigeria *Colonies on the East Coast* Kenya Uganda Zanzibar Somaliland Tanganyika Territory

South Africa The British possessions in South Africa occupy a series of great terraces, which rise up to a range of mountains running in a curve from south-west to north-east, and succeeded by a high plateau The climate resembles that of Australia, there is abundant rainfall on the east and south coasts, but the interior is very dry The Cape of Good Hope and Natal provinces occupy the seaward slopes and the pastoral plateaus of the extreme south The Bechuanaland protectorate adjoins the Cape province on the north, lying between the Transvaal province on the east and South-west Africa on the west This is succeeded by Rhodesia, an immense territory extending to the sources of the Zambezi and to the south end of Lake Tanganyika, 2000 miles from the Cape of Good Hope, and touching the Nyasaland protectorate, which borders the west side of Lake Nyasa The trunk lines of railway are on the uniform gauge of 3 ft 6 in throughout all South Africa, so that there is an open way for a railway truck from Cape Town, Port Elizabeth, East London or Durban to Johannesburg and Delagoa Bay, or to Kimberley, the Zambezi and Beira The railways within the four provinces of the Union of South Africa are, almost entirely, under Government control **Time** of the 30th meridian, two hours in advance of Greenwich, is used throughout all South Africa The **Coinage**, Weights, and Measures are those of the United Kingdom.

UNION OF SOUTH AFRICA By an Act of the British Parliament (1909) the self-governing colonies Cape of Good Hope, Natal, Transvaal, and Orange River Colony were united under one government and became original provinces of the Union In the case of Orange River Colony, the name was changed to Orange Free State province The seat of

government is PRETORIA and the seat of the legislature is CAPE TOWN.

CAPE OF GOOD HOPE PROVINCE is the most developed British possession in Africa. CAPE TOWN (113) on Table Bay, the capital, has one of the best harbours in South Africa, and is a centre of trade and manufactures The main **railway** of the province runs north-east 650 miles to KIMBERLEY (18), important for its diamond mines and the junction for the Orange Free State railways, and on through FOURTEEN STREAMS, where the line to JOHANNESBURG branches off, to MAFEKING, BULAWAYO, and Central Africa The line first traverses a region of wheat-fields and rich **vineyards**, and then strikes across the Great Karroo, a dry plateau devoted to sheep-raising The *Midland Railway* starts from PORT ELIZABETH (26), a large seaport but poor harbour on Algoa Bay, of great importance for its shipping and industries, one line runs north-west through GRAAF REYNET, "The Gem of the Desert," a centre of the wool-trade, another runs north-east, with a branch from GRAHAMSTOWN and PORT ALFRED These lines join at ROSEBERG and the railway continues northwards through NAAUWPOORT, where a branch goes westward to join the Kimberley line at DE AAR, and COLESBERG to the Orange River, whence it is carried through the Orange Free State province The *Eastern* system connects the harbour of EAST LONDON with KING WILLIAM'S TOWN, an emporium for native trade, and winds northward over the mountains (highest point 5500 feet) through the coal district of the Stormberg to ALIWAL NORTH and the Orange Free State province. The coal of the *Cyphergat* and *Indwe* mines, although easily obtained, is inferior in quality, and is only used on the Eastern Railway system A network of overland telegraph lines spreads over the province, extending to Natal, the northern provinces, and to British Central Africa

Trade The chief products are **diamonds** from KIMBERLEY in Griqualand West, the **wool** of merino sheep and the **mohair** of Angora goats, **feathers** from the great **ostrich** farms near RIVERSDALE, OUDTSHOORN, and in other districts, **hides**, and **copper ore** from the mines OOKIEP in Namaqualand, brought for shipment by a railway

to PORT NOLLOTH Maize ("mealies"), wheat, kaffir corn, and oats are the chief crops, the vine is greatly cultivated in the south-western districts, and a considerable quantity of tobacco is raised. *Exports* of the Union averaged for recent years were worth over 84 million pounds (of which 44 were for gold, 13 for wool and mohair, and 8 for diamonds), the *imports* were 56 million pounds, and the main trade was with the United Kingdom There is a high protective tariff on imports A great transport trade is done by rail with the gold-fields of the Transvaal The population of Cape province is about 2¾ millions, about 650,000 being of European origin, most of them *Boers*, or Dutch-speaking farmers descended from the original settlers

Communications CAPE TOWN is 6700 miles from Southampton by the west coast route, traversed in from 15 to 18 days by the weekly mail steamers of the *Union-Castle Line*, which call at Madeira It was formerly an important station on the sea-route to India, some of the Australian and much of the New Zealand trade still passes that way There are telegraph cables to Europe along both the west and the east coasts of Africa, and an ocean cable passing through St Helena

NATAL PROVINCE, on the east coast, is separated by the Drakenberg mountains from the fertile, grain-growing district of the Crown colony of Basutoland and the Orange Free State province It has a population of 1,429,000, one-tenth of whom are Europeans Indian coolies are preferred to the natives for work in the sugar-plantations Most of the *import* and *export* trade is transport for the inland provinces The chief exports are gold from the Transvaal mines, wool, coal and sugar Maize, mohair, and bark are also exported Tea, coffee, tobacco, and cotton are grown to a certain extent, as well as sugar in the coast strip, maize and wheat on the slopes, and the upland regions are mainly pastoral. The fine port, DURBAN (57), is connected by rail with the capital, PIETERMARITZBURG (18), 50 miles inland, the line extending through the Klip-river coal-fields and NEWCASTLE, where coal is also mined, to JOHANNESBURG A branch runs to HARRISMITH and joins the Orange Free State trunk line at KROONSTADT A railway from PIETERMARITZBURG to CAPE TOWN direct is under construction.

ORANGE FREE STATE PROVINCE, originally founded by the Dutch farmers and formerly a Boer republic, occupies the high plain between the Orange and Vaal rivers It is an

agricultural and pastoral country, the resources of which could be greatly extended by irrigation The principal exports are wool, hides, ostrich-feathers, and diamonds; but the mineral resources have not hitherto been fully utilised The province is traversed from south to north by the main line of railway from CAPE TOWN and PORT ELIZABETH to the Transvaal, and west to east by the line running from KIMBERLEY, through the capital, to Natal The only large town is the capital, BLOEMFONTEIN (19), situated near the centre of the province.

TRANSVAAL PROVINCE, founded beyond the Vaal by the Dutch farmers under the name of the South African Republic, stretches northward to the Limpopo river Its area is nearly equal to that of the British Islands, and twice as great as the Orange Free State province. The railway system is under Government control jointly with that of the Orange Free State province GERMISTON (16), a suburb of JOHANNESBURG (152), is the chief railway centre where lines from the Cape Province (CAPE TOWN 1014 miles, PORT ELIZABETH 714 miles), and DURBAN (449 miles) meet, and whence lines diverge westward through JOHANNESBURG, POTCHEFSTROOM and KLERKSDORP, to FOURTEEN STREAMS where it joins with the line from CAPE TOWN to KIMBERLEY, and northward to PRETORIA (15) the capital, and PIETERSBURG A railway from PRETORIA eastward runs to Lourenço Marques in Portuguese territory in Delagoa Bay, a distance of about 420 miles from JOHANNESBURG, affording the nearest outlet to the sea From this railway one branch diverges southward to BARBERTON in a productive gold-field, and another north-westward

Resources. The prosperity of the Transvaal depends entirely on its mines, agriculture and stock-raising require to be developed by irrigation, and at present the province only produces a fraction of the food required by the inhabitants Gold is the chief product, and is mined in many widely separated parts of the province, occurring in a peculiar conglomerate known as *banket*, from which the metal is obtained by stamping, treating with mercury, and finally

extracting the last residue by means of a solution of potassium cyanide The chief mines are on the Witwatersrand, a name generally shortened to *The Rand*, and here JOHANNESBURG (familiarly *Joh'burg*) has grown into a great city with magnificent commercial buildings and wealthy suburbs, shaded by great groves of the quick-growing Australian gum-trees and pepper-trees The mines on the Rand are now worked at a depth of several thousand feet The gold output of the Transvaal, which was worth less than 1 million pounds in 1889, rose to 16 millions in 1898, declined to a trifle during the war in 1899—1902, has since been steadily increasing, and in 1921 was over 34 millions Diamonds have become a very important export since the Premier Diamond Mine near PRETORIA was opened in 1902 Coal-mines are being worked in several districts and the supply is abundant and cheap Tin, copper, and iron exist in quantities which promise great industrial development in the future

While English is the language of the towns the farmers in country districts continue to speak Dutch

South-West Africa, formerly a German protectorate and now administered under mandate by the Union of South Africa, lies between the Cape Province and Angola Much of the country is barren and desert and it has few commercial products Diamonds are found along the southern part of the coast and copper is worked at TSUMEB The principal harbours LUDERITZ and SWAKOPMUND are connected by rail with the capital WINDHOEK and there is through connection with the Cape Province railways

The **Dominion of RHODESIA** is a vast territory extending from Bechuanaland and the Transvaal northward to the Zambezi and beyond it to the Belgian Congo and Nyasaland The region south of the Zambezi is called Southern Rhodesia, and that north of it, Northern Rhodesia It was until recently administered by the *British South Africa Company*, familiarly known in South Africa as the Chartered Company. The railway, which is a continuation of the line from Cape Town to Kimberley and Mafeking, extends to BULAWAYO, a town planned on a magnificent scale At BULAWAYO,

1362 miles from Cape Town, the railway forks, one line running north-westward through the Wankie coal-field to the Zambezi, which it crosses at the Victoria Falls, whence it continues northward to the Broken Hill copper mines and into the Belgian Congo The second line runs north-eastward to SALISBURY, the capital of Southern Rhodesia, and then eastward past UMTALI and across Portuguese East Africa to the sea at the excellent harbour of Beira, which is 675 miles from BULAWAYO There are important deposits of gold at many points throughout Southern Rhodesia, and other valuable minerals, besides coal, have been discovered The country, especially the province of Mashonaland, is admirably suited for stock-raising, which is successfully carried on now that the cattle-diseases which have ravaged South Africa are being stamped out Considerable areas are under cultivation, the climate of the higher parts being suitable for the growth of all kinds of European cereals and vegetables Tobacco, rubber, cotton and coffee are also cultivated.

Nyasaland Protectorate, to the south and west of Lake Nyasa, is under the charge of a Governor appointed by the Colonial Office, and has been developed by the African Lakes Company and by missionaries The cultivation and export of **coffee, cotton** and **tobacco** are considerable, and tea-planting has proved very successful Rice, maize and wheat are also cultivated Access to the country is by river steamers which ply between the Chinde mouth of the Zambezi and CHIROMO on the Shire river, and by the Chindio-Port Herald-Blantyre railway which the proposed bridge across the Zambezi will connect with the line from Beira In these territories the sale to natives of drink and fire-arms is prohibited

MAURITIUS, an island of nearly 400,000 inhabitants, half of them Indian, lies in the Indian Ocean 2300 miles north-east of Cape Town, and is a port of call of the *Messageries Maritimes* steamers The capital, ST LOUIS, is the terminus of two short railways which with their branches traverse extensive sugar plantations worked by Indian coolies **Sugar**, practically the sole product and export, is produced to the value of 7 million pounds a year, and sent chiefly to

India, Australia, South Africa, and the United Kingdom. A telegraph cable is laid to Seychelles, and thence to Zanzibar, connecting with Europe

GAMBIA, SIERRA LEONE, GOLD COAST, and **NIGERIA** are Crown colonies on the west coast of northern tropical Africa in which railway construction is beginning to expand trade Portions of the former German colonies of Togoland and Cameroons have been mandated to Great Britain under the Treaty of Versailles, the British sphere of Togoland now belongs to the Gold Coast, and of Cameroons to Nigeria. The *exports* are mainly forest produce, of which palm-oil and kernels are the staple, ground-nuts, kola-nuts, hides, india-rubber, mahogany, gum, beeswax and cotton making up the remainder The *imports* are cotton-cloth, rum, fire-arms and ammunition The region is unhealthy, but much is being done to diminish disease by improving the sanitation and destroying mosquitoes

The Southern Provinces of Nigeria take in the delta of the Niger, including **Lagos** and the territory formerly known as the Oil Rivers Protectorate LAGOS, the seat of Government and the chief port, is in direct railway communication with Zungeru, the capital of Northern Nigeria PORT HARCOURT on a branch of the Bonny river is the terminus of a railway which runs into the interior and taps the coal-field at ENUGU In addition to the export of palm-oil and kernels there is a large transit trade on the navigable branches of the Niger, especially through the Forcados mouth

The Northern Provinces of Nigeria stretch inland from the head of the Niger delta to Lake Chad, and a growing trade is being done by steamers and motor-canoes on the Niger and its tributary the Benue LOKOJA at the junction of the two rivers is an important trade centre, from which telegraph lines are being extended through the protectorate ZUNGERU, the capital, is on the Lagos railway, which comes by way of ILORIN and JEBBA, and extends to MINNA on the line running northwards from BARO, the head of permanent navigation on the Niger, to ZARIA and KANO From ZARIA a line

branches south-easterly to the Bauchi tin-fields SOKOTO and KANO are large native cities, formerly the capitals of important native states, and trading both with the Niger and across the Sahara with Tripoli

KENYA COLONY AND PROTECTORATE includes the former territory of the Imperial British East Africa Company and the mainland dominions of the Sultan of Zanzibar, until recently known as the **East Africa Protectorate**, which is crossed by the equator It has a fine harbour at MOMBASA, and the country in the interior, where the height above the sea is great, is capable of cultivation and grain-growing, and yields ivory A railway 618 miles long traverses the whole breadth of the colony from MOMBASA to KISUMU on Lake Victoria The principal settlement on this line is at NAIROBI, the capital, on the healthy high plain On the west the colony adjoins the **Uganda Protectorate**, a country with a fairly healthy climate, except in the lower parts The soil is very fertile and the agricultural industries include the cultivation of cotton, the output of which is rapidly increasing, india-rubber, coffee, sugar and cocoa ENTEBBE, the administrative capital situated on the north-west shore of Lake Victoria, is connected with the railway from MOMBASA by steamers which ply between it and PORT FLORENCE The chief exports are cotton, hides, chillies, india-rubber and ivory

ZANZIBAR, nominally under a Sultan, is a British protectorate It includes the fertile **clove** and **coco-nut** bearing islands of Zanzibar and Pemba, with the great trade centre of ZANZIBAR on the former This town does more trade than any other on the east coast of Africa, and is an emporium for the ivory, india-rubber, etc , brought from the interior It has direct communication with India, and is a port of call for the mail steamers which serve the whole east coast of Africa The **coinage** of East Africa and Zanzibar is that of India, and most of the retail trade is in the hands of Indian merchants

The **Somaliland Protectorate** lies along the Gulf of Aden between French and Italian Somaliland It is crossed by important caravan routes from Abyssinia to the coast towns

of BERBERA, ZEILA and BULHAR which export hides, ostrich feathers, cattle and sheep

Tanganyika Territory, formerly German East Africa, extends from Kenya Colony to the Portuguese possessions with an important harbour at DAR-ES-SALAAM, from which a railway runs into the interior to the trading post of TABORA, and thence to KIGOMA on lake Tanganyika Another line runs from the northern port of TANGA to MOSHI at the foot of Kilimanjaro with a temporary line from Kahe linking up with the Kenya Colony railway at Voi The chief exports are sisal, cotton, hides and skins, copra and coffee.

CHAPTER XI

COLONIES AND DOMINIONS IN AMERICA

Falkland Islands British Guiana British Honduras *West Indies* — Trinidad, Jamaica, Barbados, Bahamas, Windward Islands, Leeward Islands Bermuda *Newfoundland Dominion of Canada* —Resources Trade Communications Railways The Provinces, with their resources and towns

The FALKLAND ISLANDS, 300 miles east of the southern extremity of South America, have a population of about 3000, the peaty soil bears good grass, supporting 8000 **cattle** and about 700,000 **sheep**. The harbour, STANLEY, is a station for sealing vessels, and for the repair of ships damaged in rounding Cape Horn It exports **wool**, and the products of the great **whaling** industry on South Georgia, an outlying dependency.

BRITISH GUIANA, about the size of the British Islands, is situated on the mainland of South America, bordering on Venezuela. GEORGETOWN on the Demerara river, with an enterprising and prosperous population of 55,500, is the capital and port The climate is extremely hot The chief crop is **sugar-cane** The total exports are worth about 4 million pounds a year, of which 2 million represents sugar The exports next in value are rum, diamonds and balata (a species of gum). **Gold** is abundant in the north-west of the colony, and within recent years great advances have been made in mining.

BRITISH HONDURAS in Central America exports **mahogany**, **log-wood** and tropical **fruits** from its capital, BELIZE, on the Caribbean Sea

The WEST INDIA ISLANDS contain six British Colonies, most of them under the direct control of the Colonial Office The exports and imports of the group balance each other at about 13 million pounds The chief trade is with America, less than one-third being with British ports There is a **high tariff** on imported goods in the West Indies, but the commodities taxed, and the rate, vary in each In some islands there are **export duties** also

The staple *export* has always been **sugar**, but other tropical productions, such as **cocoa**, **coffee**, and **fruit**, are now being cultivated

with profit British coinage, weights, and measures are in use There are regular steamer service from Liverpool by the New Zealand Line and from Avonmouth to the West Indian ports, occupying about 18 days on the passage Telegraph cables are laid to the continents of North and South America, thus connecting with Europe The population is mainly of slave-descended negroes, who cultivate their own ground, most of the plantation work is done by Indian coolies

(*a*) **TRINIDAD**, off the mouth of the Orinoco, absorbs more than one-third of the West Indian trade, and has most commerce with the United Kingdom, United States, Venezuela, and France PORT OF SPAIN (60) is the capital and chief seaport, possessing a fine natural harbour and railways to SAN FERNANDO and other towns The export of **sugar**, which is manufactured at central factories, the canes being collected from the growers, is nearly half that of British Guiana **Cocoa** is the most characteristic product, its value being twice that of the sugar, **asphalt**, from the great Pitch Lake, **petroleum** and **coco-nuts** are largely exported The island of **Tobago** is politically united with Trinidad.

(*b*) **JAMAICA**, in the Caribbean Sea, the largest and most fertile of the British West Indies, has a population of over three-quarters of a million, less than 20,000 of whom are of European origin The chief productions are **bananas**, which make up half the value of the exports, **dye-stuffs**, **coffee**, **sugar**, and **rum**, but cocoa and spices are also of value KINGSTON (63), the capital, on the south-east, has a magnificent harbour, which does half the trade of the island, it is connected by rail with the neighbouring sugar estates, and the farming and forest districts of the north and west. There are several smaller seaports

(*c*) **BARBADOS**, with about 150,000 inhabitants, crowded on an area of 166 square miles, is covered with cane plantations, and exports as much **sugar** as Trinidad, but the manufacture is wasteful, being carried on in small mills by the planters themselves Cotton is now grown and exported. The chief harbour and capital, BRIDGETOWN (13), is the terminus of a short railway, and is one of the most important centres for steamers in the West Indies

(*d*) The **BAHAMAS**, trading chiefly with the United States, produce large quantities of fruit, chiefly **pine apples.** The plant yielding sisal-hemp is now largely cultivated, and **sponges** have long been a staple export

(*e*) The **WINDWARD ISLANDS** form one colonial group, and include the islands of Grenada, St Vincent, the Grenadines and St Lucia, each of which has its own trade system and tariff. **Cocoa**, spices, sugar, cotton, and rum are the chief products.

(*f*) The **LEEWARD ISLANDS** are similarly constituted, and include Dominica, Antigua, the Virgin Islands, St Kitts, and Montserrat The last named is the smallest of the group but yields a characteristic export in the shape of lime-fruit and the lime-juice prepared from it

The **BERMUDA** Islands, midway between the West Indies and Canada and connected by cable with both, are market gardens for the great cities of eastern North America Onions and potatoes are the chief exports.

NEWFOUNDLAND, a large island at the mouth of the Gulf of St Lawrence, is separated from Labrador (which is politically part of it) by the narrow Strait of Belleisle The population is mainly occupied with **fishing** off shore, and on the *Grand Banks* to the south-east of the island, and with **fish-curing** and the manufacture of cod-liver oil The exports and imports amount to **6** million pounds The United States, the United Kingdom, and Portugal take the largest share of the *exports*; then follow Brazil, Spain, and Canada The *imports*, chiefly food and clothing, come in nearly equal proportion from the United States and Canada, and somewhat less from the United Kingdom. The capital, ST JOHN'S (37), on the east coast, is the great fishing centre and the head-quarters of the Scottish sealing fleets when at work. There are important **copper-mines** in Notre Dame Bay on the north-east, large beds of iron ore, which are being worked, on Bell Island in Conception Bay, and rich deposits of coal, and other minerals awaiting development At Grand Falls and Bishop's Falls on Exploits river there are extensive paper

mills, from which large quantities of paper and paper pulp are shipped to Great Britain A railway crosses the island from ST JOHN'S *via* Exploits river to PORT AUX BASQUES

CANADA

The **DOMINION OF CANADA** is a confederation of provinces which were formerly separate colonies The area is over 3 million square miles, and the population of nearly 9 millions, including 110,000 partially civilised natives, is densest in the east The **climate**, usually dry, is warm in summer, but very cold in winter Snow lies from three to five months of the year, when, although the railways remain open, road traffic is mainly carried on by **sleighs** The rivers and canals are frozen during winter, and all ports, except those on the Pacific coast, and one or two on the Atlantic, are closed by ice The climate is most severe in the interior, but on the Pacific coast it is as mild and moist as in Great Britain

Resources The chief resources of Canada were formerly **furs** and **lumber** (timber) and other forest productions (e g potash, rosin and bark) obtained from the great forest belt of the eastern provinces There are extensive woods still untouched on the Pacific slope, but the exports of farm produce are now worth much more than those of lumber In order of value as exports they are **wheat** and **flour**, **live-stock** and **meat**, **butter** and **cheese**, **fruit** and **vegetables** The **fisheries** are unrivalled both in the sea and inland waters **Coal** is abundant on both coasts, and new mines in the north-west are being opened every year There are very extensive **petroleum** fields The most valuable metals produced in order of importance are **iron**, **gold**, **copper**, **silver**, **nickel**, and **lead**

Trade Manufactures are **protected** by a **high tariff**, with a preferential tariff in favour of the United Kingdom and most of the colonies, on imported goods, and factories of various kinds flourish in the large eastern towns The *exports* amounted in 1921 to 238 million pounds, and the *imports* to 248 The trade is mainly with the United States and the United Kingdom, the former sending nearly three-quarters of the imports and receiving about half the exports, the latter taking one-quarter of the exports and sending about one-sixth of the imports

Communications Canada does a large shipping trade, possessing 7900 registered vessels (including more than 4000 steamers) of an aggregate tonnage of three-quarters of a million Several lines of steamers, of which the *Canadian Pacific* is the most important, run weekly from Southampton, Liverpool or Glasgow to MONTREAL,

through the Strait of Belleisle in summer (a distance of 2600 miles, accomplished in 9 days or less), and in winter, when the St Lawrence is blocked by ice, to Portland (Maine), or HALIFAX, whence there are railways A line of fast steamers is expected to reduce the time of this passage to 5 days The St Lawrence has been dredged to allow ocean-steamers to reach MONTREAL, 160 miles above QUEBEC A system of ship-canals to avoid the rapids of the St Lawrence admits vessels drawing 14 feet to the Great Lakes The *Welland Canal* goes round Niagara Falls and connects Lake Ontario with Lake Erie, from which there is free passage through Lakes Huron and Michigan, and by the *Sault Ste Marie Canals* (one in Canada and two in United States territory) to Lake Superior, 2000 miles from the ocean The great rivers Saskatchewan and Mackenzie, flowing to Hudson Bay and the Arctic Sea, contain nearly 4000 miles of navigable water-way in the heart of the continent, and steamers run on many of the large northern lakes

Railways There are 40,000 miles of railway, half of which the Dominion Government owns and operates under the name of the *Canadian National Railways* This system includes two trans-continental lines which run west from QUEBEC and MONTREAL for 3000 miles to VANCOUVER and PRINCE RUPERT opening up immense areas of new land for settlement A third transcontinental line, the *Canadian Pacific*, also has its western terminus at VANCOUVER In conjunction with lines of Pacific steamers this railway runs the shortest way from Europe to Japan and China The proposal to run steamers adapted for ice navigation from Europe through Hudson Bay to PORT NELSON, the terminus of a railway which taps the rapidly developing grain-growing country west of Lake Winnipeg, would if carried out save 750 miles The Canadian telegraph system comprises 53,000 miles of line, and the regulation of standard time for this purpose and for railways, is the same as that for the United States The telephone is very generally used in Canada, for each 100 of the population there were 9 8 telephones in use in 1920 There are also about 6000 wireless stations in operation The postal rates, the lighting and buoying of the coasts and the system of coinage are uniform with those of the great republic

The province of *Nova Scotia* in the east produces 6 million tons of coal a year, one of the chief coal-fields is at SYDNEY, in Cape Breton Island, close to LOUISBERG, the harbour nearest Europe Iron is worked at several places, and gold is mined. The fisheries on the coast are the chief source of wealth and are the most extensive in Canada HALIFAX (58), on one of the finest harbours in the world for size and safety, does a large foreign trade and has manufactures

The adjoining provinces of *New Brunswick* and *Prince*

Edward's Island are chiefly dependent on **lumbering** and **agriculture**, especially potato-growing, although fishing and lobster-tinning are leading industries ST JOHN (47) contains cotton-mills, exports timber, and carries on general trade

Quebec Province, through which the St Lawrence runs, has a population mainly of French origin and speaking French MONTREAL (618), on an island at the junction of the Ottawa and St Lawrence rivers, is the largest city of Canada, and has the greatest foreign trade, though 1000 miles from the Atlantic Ocean it handles one-quarter of the imports and exports of the Dominion **Grain** (towed in canal barges from KINGSTON, where it is collected from the far west), **flour**, ground in the city, **lumber**, **cheese**, and **butter**, are the chief exports MONTREAL is the centre both of the waterways and railways of Canada The *Richelieu Canal* from Lake Champlain, giving access to the Hudson river and New York, opens opposite the city There is a large industrial population engaged in textile factories, sugar refineries, etc QUEBEC (95) trades chiefly in **lumber** floated in rafts down the rivers from the interior Its shipping trade has declined in favour of Montreal

The province of *Ontario* stretches westward from the Ottawa river along the northern margin of the Great Lakes, and although there are the greatest **nickel** mines in the world at SUDBURY, **copper** and **silver** mines on the shore of Lake Superior, gold in the west, and much **petroleum**, it is mainly **agricultural**. TORONTO (522) on Lake Ontario, a great railway, industrial and commercial centre, conducts a large trade on the lakes HAMILTON (114), at the west end of Lake Ontario, is an outlet for the grain-producing district of the fertile peninsula OTTAWA (108), the centre of the Canadian lumbering trade, and the seat of the Dominion Parliament, is joined to MONTREAL (120 miles distant) by a canal used by shipping, the lumber rafts shoot the rapids and pass behind MONTREAL to QUEBEC Another canal 130 miles long leads to KINGSTON on Lake Ontario LONDON (61), the chief town of the populous peninsula between Lakes Ontario, Erie, and Huron, is connected by a close network of railways

with all parts of Canada. FORT WILLIAM on Lake Superior is a grain-shipping port of the railways from WINNIPEG

Manitoba province extends westward from Ontario along the United States boundary It is a prairie country rapidly becoming occupied by wheat-fields of vast extent WINNIPEG (179), the capital, 1400 miles from Montreal by railway, is in the centre of the Red River valley, the richest wheat-growing region in the world From WINNIPEG railway lines radiate to all parts of the province and two run southward to the United States, all these are employed in collecting and transporting **wheat** and live-stock

Between Manitoba and the Rocky Mountains are the vast grain-growing and cattle-rearing provinces of *Saskatchewan* and *Alberta* which are being rapidly opened up by means of railways *Saskatchewan* is the greatest **wheat**-producing province in the Dominion, and dairy-farming is becoming an important industry. **Coal** is found on the Souris river near the international boundary REGINA (34), the capital, is a junction on the three transcontinental lines 350 miles west of WINNIPEG SASKATOON is an important distributing centre, and PRINCE ALBERT, the most northerly town of importance is the centre of a mixed farming and ranching district In *Alberta* the natural pastures at the base of the Rocky Mountains offer special advantages for **cattle-ranching**, but the province is rapidly developing into a **grain**-producing territory, assisted largely in the south by irrigation The province contains extensive deposits of **coal** which are being mined at MEDICINE HAT, LETHBRIDGE, and EDMONTON (59), the capital Gold is found on the Saskatchewan river, and petroleum and natural gas have been found at many points

British Columbia is the richest mineral province, and mining is the principal industry **Coal** occurs in many parts, the western slope of the Rockies contains vast quantities, chiefly mined in the neighbourhood of the Crow's Nest Pass, and largely converted into coke at FERNIE and MICHEL for smelting purposes The oldest mines in the province are at NANAIMO on the east coast of Vancouver Island, whence coal is exported to San Francisco and China **Silver-lead** deposits are characteristic of the country between the Rocky

Mountains and the Arrow lakes. To the south of this in the Kootenay, Rossland and Boundary districts are deposits of ores containing **copper** and **gold**. The chief placer-gold fields are in Cariboo and Atlin districts. The **fisheries** of British Columbia, especially for **salmon**, are important. Fur-seal hunting, for many years one of the most profitable industries, is declining owing to the international difficulties concerning pelagic sealing in Bering Sea where the greatest number of seals have been taken. The province has extensive areas of merchantable timber. Farming and fruit-growing are carried on in the valleys and on the lower slopes of the mountains. The capital is VICTORIA (39) on Vancouver island. ESQUIMAULT, close to Victoria, is a station of the Royal Canadian Navy and a centre of the shipbuilding industry. On the mainland the chief cities are VANCOUVER (117), the commercial metropolis and the western terminus of the transcontinental railways, and NEW WESTMINSTER. The most northerly transcontinental line runs through Yellowhead Pass to PRINCE RUPERT near the mouth of the Skeena river.

The placer mines on the Klondike river in the *Yukon* territory have attracted many gold-seekers to the remote DAWSON. Access to the district is by sea to SKAGWAY on the Lynn "Canal," thence by railway over the White Pass to the upper waters of the Yukon, which are navigable by boats.

CHAPTER XII

THE UNITED STATES OF AMERICA

Configuration Climate Water-ways Agriculture and Live-stock Coal Ores Political Divisions Resources and Towns Atlantic States, Central States, Cordilleran States, Alaska Railways People Government Time Trade Shipping Distant Dependencies

Configuration The United States, with an area of 3 million square miles, occupy the whole breadth of the American continent between Canada and Mexico, stretching from 49° to 25° N lat The Atlantic coast-line is rocky and indented in the north, with many deep-water havens, south of Cape Cod the water becomes shallower, and harbours fewer, while from the mouth of the Delaware the shore is very low and navigation is hampered by a fringe of narrow bars or sand-banks which extend into the Gulf of Mexico The steep and rocky Pacific coast has, as a rule, deep water close to it, but has only three very good harbours In the moist Californian valleys and along the west coast there are belts of pine forest, but the western half of the continent is a land of high, arid *plateaus*, diversified by river-cañons and ranges of lofty mountains running from north to south, with little or no rainfall From the base of the Rocky Mountains, the region of *Great Plains*, treeless plateaus from 6000 to 4000 feet in elevation, covered naturally with rough grass, stretch eastward for 600 miles, merging in the fertile, though naturally treeless, *prairie* lands which pass into the still more fruitful *Mississippi valley* This region, as well as the Alleghany or *Appalachian mountains* which bound it on the east, and the narrow *Atlantic Plain* beyond, is richly wooded with a variety of timber

The **climate** is semi-tropical in the south, over most of the area it is temperate, although colder than corresponding latitudes in Europe and with a greater range of temperature between summer and winter *Tornadoes*, storms of tremendous intensity, sometimes pass over the central states, doing great damage to towns and forests, and the absence of east and west mountain ranges allows cold winds from the north to sweep the whole continent Snow-storms also are more severe than in Canada

The water-way of the *Great Lakes* and the St Lawrence forms the natural outlet for the produce of the northern states The vast systems of the *Missouri* and *Mississippi* with their tributaries the *Ohio* and *Arkansas* drain two-fifths of the country into the Gulf of Mexico, and give 15,000 miles of navigation The *Columbia* and *Sacramento* on the Pacific coast are navigable for much shorter distances. On the Atlantic slope the chief streams are the *Hudson, Delaware, Susquehanna,* and *Potomac* The Hudson communicates at ALBANY by the *Champlain Canal* with Lake Champlain, and by the *Erie Canal* with the Great Lakes

Agriculture employs nearly half the working population of the United States **Maize** or Indian corn, known in America simply as *Corn,* is the staple grain, covering a total area twice that of Great Britain Its cultivation is carried on in all the States, but centres in those traversed by the Mississippi and Missouri before their junction, *Illinois, Iowa, Missouri,* and *Nebraska* are preeminent **Wheat** filling an area one and a half times that of England and Wales occupies the farms of the northern central states around the Great Lakes, and the valleys of the Mississippi and Red River Half the wheat produced in the United States in 1922 was grown in the states of *Kansas, North Dakota, Illinois, Nebraska, Montana,* and *South Dakota* **Oats** are grown chiefly in the north, over an area twice that of all Ireland **Barley** is cultivated to a much smaller extent The remaining cereals, rye and buckwheat in the northern states, rice in *South Carolina,* and Kaffir corn in *Texas,* are comparatively unimportant The exports of wheat fell off from 153 million bushels in 1880 to 54 million in 1890, but in the same time the export of flour rose from 6 to 12 million barrels In 1921 the export of wheat was 280 million bushels and that of flour over 17 million barrels In the south an area larger than England is under **cotton**, *Texas, Mississippi,* and *Arkansas* are the chief plantation states and grow half of the total yield of 16 million bales In 1860, before the abolition of slavery, nine-tenths of the cotton crop were produced by negro labour, now more than one-half is raised by white workers **Tobacco** is largely grown in the states of *Kentucky, North Carolina,* and *Virginia* **Sugar** is produced from the cane in the low delta-lands of *Louisiana* and in *Texas*, from **beets** in *California* and *Michigan*, from **sorghum** stalks in *Kansas* and other central states, and from the sugar maple in the north-east The prairies are being gradually planted with trees

The number of swine and cattle kept in proportion to sheep is remarkable The **cattle-ranches** of *Texas* and *Nebraska* contain enormous herds, the fate of which is either to be shipped from the Atlantic ports to Europe, or after fattening on the richer pastures of *Iowa* and *Illinois* to be slaughtered in the great stock-yards of the western meat-centres, and exported either frozen or tinned **Swine** (hogs) are kept all over the country, but chiefly in the corn states *Iowa, Illinois,* and *Missouri* **Sheep-farming** on a large scale is a leading occupation in *Texas* and *California*, but the wool produced is not sufficient to supply the demand for home manufactures.

Million acres under Crops, and million head of Live-stock

	Maize	Wheat	Oats	Cotton	Cattle	Sheep	Swine
1900	83	42	27	26	44	42	37
1910	114	49	35	32	69	57	48
1920	102	61	42	36	67	35	59

Coal exists under vast areas of the country, and the seams are usually very thick and accessible, but the process of mining is more wasteful than in Europe The most developed coal-field is the **Appalachian**, which stretches from *Pennsylvania* to *Alabama* along the Appalachian mountains, and yields more than three-quarters of the coal raised in the states *Pennsylvania* contains most of the productive mines both of **anthracite** and **common coal**, and as iron-ore and limestone are abundant in the same region it has become the chief state for iron and steel manufacture This field is also largely worked in *West Virginia*, which ranks next to *Pennsylvania* in coal production, *Ohio*, *Maryland*, *Kentucky*, and *Alabama* The **east central coal-field** lies in *Illinois*, which stands third among the coal producing states, *Indiana*, and western *Kentucky* The **west central coal-field**, runs through *Iowa*, *Missouri*, *Nebraska*, *Kansas*, *Arkansas*, *Oklahoma*, and *Texas*, along the slope of the great plateaus A small detached field is found in the north-east of *Michigan*, and one still smaller in *Maryland* Most of the **Rocky Mountain** states contain some coal-measures and have great deposits of lignite There is a large output of true coal in *Washington* state round Puget Sound *Oklahoma*, *West Virginia*, *California* and *Pennsylvania* contain the chief **petroleum** and **natural gas** wells of the country

Ores Three-quarters of the iron-ore is mined in *Minnesota* and *Michigan*, the rest chiefly in *Alabama*, *New York*, and *Wisconsin* Iron is smelted in many other states in smaller quantities The shores of Lake Superior in northern *Michigan* yield about one-seventh of the **copper** supply, chiefly from the famous Calumet and Hecla mines, and *Montana* yields about the same amount, *Arizona* however yields nearly a third of the whole production One-half of the **zinc** produced comes from *Illinois* and *Oklahoma*, most of the remainder from *Kansas* Deposits of tin-ore occur in the Black Hills of *South Dakota*, and in *California*, but the product does not yet (1920) influence the market **Lead** is mainly found with silver in *Idaho* and also in *Colorado* and *Utah* The precious metals abound in the Cordilleran and Pacific states **Gold**, now chiefly mined from quartz, is produced mainly in *California*, *Colorado*, *Alaska*, *South Dakota*, *Nevada*, *Arizona*, *Montana*, and *Utah*, and **silver** in *Montana*, *Utah*, *Nevada*, and *Colorado* Some **salt** is made on the coast by evaporating sea-water, but the chief supply is from the brine-wells bored in *New York*, *Michigan*, *Ohio*, and *Kansas* The amount and value of the mineral produce are

1900	Coal	Iron	Lead	Copper	Silver	Gold
Thousand tons	241,000	13,800	242	270	1 8	0·12
Million pounds	61	52	5	20	7	15 8
1910						
Thousand tons	478,000	27,300	323	482	1 7	0 15
Million pounds	126	85	6 5	27	6	19 2
1920						
Thousand tons	588,000	35,700	426	540	1 7	0 07
Million pounds	513	228	15	44	12	10

Political Divisions There are 48 *states* in the Union, as well as outlying possessions, including Hawaii, Porto Rico, and the Philippines They comprise more than 1100 cities, and 800 smaller incorporated towns, all commercially important Geographically, the country may be divided into the three great regions of the *Atlantic, Central,* and *Cordilleran States*

The Northern Atlantic States include the old New England States (*Maine, New Hampshire, Vermont, Massachusetts, Rhode Island,* and *Connecticut*), *New York, New Jersey,* and *Pennsylvania* This is the chief **manufacturing** region, and the northern states are great in **lumbering** and **fishing.** Separated from JERSEY CITY by the Hudson the city of Greater NEW YORK includes Manhattan Island and Brooklyn, the latter reached by several huge suspension-bridges over East River, and contains a dense population of more than $5\frac{1}{2}$ millions There are over 30 miles of water frontage, and the port ranks with London and Liverpool. More than half the exports of the United States pass through it, **cotton** from the southern railways, **grain** by rail and canal from the collecting centres on the Great Lakes, **petroleum** in pipe-lines from the wells 300 miles inland, **cattle** and **provisions** from the far west, being the chief items It receives two-thirds of the imports, and distributes them by rail, river, and sea to all parts of the Union The distance to Liverpool is 3050 miles, which is covered by the fastest steamers in about 6 days, and by trading steamers in from 10 to 15 NEW YORK has numberless manufactories, is the head-quarters of the American printing and publishing trades, and is one of the financial centres of the world PHILADELPHIA

(1824), at the junction of the Schuylkill and Delaware rivers in *Pennsylvania*, 96 miles from the sea, is, on account of the proximity of **iron** and **coal**, the chief manufacturing and engineering city of the States The export and import trade is carried on by ocean-steamers, and one of the most complete railway and canal systems in the world radiates over *Pennsylvania* BOSTON (748), *Massachusetts*, is built on a number of converging peninsulas in a bay of deep water A large European trade is done in exports of **grain**, **cotton**, **animals** and **fish**, and in imports of raw material for manufactures It ranks next to NEW ORLEANS in foreign trade, although less than one-tenth of the total exports and imports passes through it PORTLAND, *Maine*, is a winter harbour for the Liverpool and Montreal steamers *New York* state contains ROCHESTER (296), a port on Lake Ontario, and BUFFALO (507) on Lake Erie, while *Pennsylvania* has the port of ERIE on the same lake NEWARK (414), *New Jersey*, PROVIDENCE (237), *Rhode Island*, LOWELL (113), and FALL RIVER (120), *Massachusetts*, MANCHESTER, and CONCORD, *New Hampshire*, have large **cotton** and **woollen** factories, while ALBANY (113), SYRACUSE (172), and TROY in *New York* contain important engineering works The city of PITTSBURG (588) on the navigable Ohio forms the chief centre of the Pennsylvanian iron production and manufacture, OIL CITY, about 90 miles farther north by rail, is in the middle of the great **petroleum** region, whence pipelines radiate in all directions Natural gas has been much used for manufacturing purposes in this district HARRISBURG on the Susquehanna, SCRANTON (138) in the anthracite region of the north-east, and READING, are iron manufacturing towns and railway centres in *Pennsylvania*. POTTSVILLE, north-east of READING, is the centre of the most productive coal region in the state

The Middle Atlantic States (*Delaware*, *Maryland*, the *District of Columbia*, and *Virginia*) have one great seaport, BALTIMORE (734), on Chesapeake Bay in *Maryland* It has a large export trade, chiefly in **cotton**, **petroleum**, **tobacco**, and **grain**, and is a busy manufacturing town WASHINGTON (437), *District of Columbia*, is the capital

of the United States WILMINGTON in *Delaware* is a seaport with large cotton-mills, NORFOLK on Chesapeake Bay ships cotton and fruit. **Tobacco**, one of the chief crops in this group of states, is manufactured largely at LYNCHBURG, *Virginia* NEWPORT NEWS in *Virginia* is a busy seaport

The Southern Atlantic States comprise the tobacco, rice, and cotton growing lands of *North* and *South Carolina*, *Georgia*, and *Florida* Here there are no large towns and few manufactures The harbours of WILMINGTON in *North Carolina*, CHARLESTON in *South Carolina*, and SAVANNAH in *Georgia*, export large quantities of **cotton**. Phosphate rock, used for fertilisers, is also an important export Timber is shipped at PENSACOLA in *Florida*, but market-gardening and orange-growing are the chief industries of that state. In this group of states the negro population nearly equals the white.

The North-eastern Central States (*West Virginia*, *Ohio*, *Indiana*, *Illinois*, *Michigan*, and *Wisconsin*) have the Great Lakes on the north, and are bounded on all other sides by the water-ways of the Ohio and Mississippi. CINCINNATI (401), the commercial centre of the Ohio valley, has large manufactories, and an enormous trade in **pork** It has river navigation to NEW ORLEANS, and a canal 250 miles long runs to TOLEDO (243), a grain-shipping port on Lake Erie. The lake-port of CLEVELAND (797), has iron manufactures INDIANAPOLIS (314) is a manufacturing town and important railway centre The state of *Michigan*, with 1600 miles of lake-shore, has many busy harbours, of which DETROIT (993) is the most important. BAY CITY, on Saginaw Bay, is a centre of the American **lumber** trade, and has great **salt**-wells Keeweenaw peninsula contains the chief **copper**-mines of America CHICAGO (with suburbs 2701), in *Illinois* on the south-west corner of Lake Michigan, is the greatest inland city of America, and the chief port for the **wheat** and lumber trade on the Lakes The traffic in this harbour is enormous, greater than that of New York, and steamers of 2000 tons can sail direct to the ocean by the St Lawrence. A considerable proportion of the population are Germans and there are many Irish The **pork**-packing and **meat**-canning factories consume annually nearly 8 million

pigs and 2 million cattle There are extensive iron manufactures, including steel shipbuilding, and the city ranks next to NEW YORK in the book-trade CHICAGO is the chief railway centre in the States, controlling more than 50,000 miles of line One of its suburbs, PULLMAN, was built by the *Pullman Car Company* for their railway rolling-stock works PEORIA, on the Illinois river, has valuable coal-mines MILWAUKEE (457), a port on Lake Michigan, is the chief town of *Wisconsin*, and a great manufacturing centre

The North-western Central States comprise *Minnesota* and *North Dakota* (sharing the rich wheat-lands of the Red River valley), *South Dakota* (mainly dependent on its mineral wealth), *Nebraska*, *Iowa*, *Kansas* (the central state), and *Missouri* MINNEAPOLIS (380), and ST PAUL (234), on opposite banks of the Mississippi, at the head of navigation, do an immense trade in flour milling and railway transport DULUTH, the most westerly port of Lake Superior, ships grain brought by rail from the far west OMAHA (191), in *Nebraska*, is a manufacturing and meat-packing city and railway junction ST LOUIS (773) in *Missouri* on the Mississippi, below the junction of the Missouri and 1200 miles from NEW ORLEANS, is the chief emporium on the river, with a vast trade north and south by the river, and east and west by rail At Iron Mountain and Pilot Knob near ST LOUIS there are productive iron-mines, and lead is raised in many parts of the state of *Missouri* KANSAS CITY (324), on the Missouri, is an agricultural centre, *Kansas*, in which one part of the city lies, being one of the chief wheat-growing states, the town has also an extensive meat-packing trade

The South-eastern Central States (*Kentucky*, *Tennessee*, *Mississippi*, and *Alabama*) lie east of the Mississippi river and south of the Ohio In the state of *Mississippi* the negro population considerably outnumbers the white. LOUISVILLE (234), in *Kentucky* on the Ohio, does a large pork-packing and tobacco trade VICKSBURG (*Mississippi*), a cotton-shipping port 320 miles from NEW ORLEANS, is the highest point on the river for ocean-steamers MEMPHIS (162) in *Tennessee*, the most important town on the Mis-

sissippi between NEW ORLEANS and ST LOUIS, is a great railway centre on account of its bridge across the river. MOBILE (*Alabama*) on the Gulf of Mexico ships cotton and lumber. There are great ironworks at BIRMINGHAM (179) (*Alabama*), which is one of the chief industrial towns in the south

The South-western Central States are *Arkansas* and *Louisiana* west of the Mississippi, *Texas*, and *Oklahoma*. NEW ORLEANS (387), 100 miles from the entrance to the Mississippi, in *Louisiana*, now ranks next to NEW YORK in its foreign trade The river is protected all the way from the sea to far past the city, by high banks or *levées* to prevent it from flooding the adjoining land, the level of which is lower than that of the water, and the channels are constantly dredged to avoid silting up **Cotton**, the main export, and the miscellaneous produce of the central states brought down by river-steamers and by rail, are transferred here to ocean-going vessels NEW ORLEANS is 2000 miles by sea from NEW YORK, and 4700 from Liverpool A great railway bridge increases its importance for land trade to east and west GALVESTON in *Texas* on the Gulf of Mexico is the chief outlet for the cotton, cattle, hides, and other commodities produced in the largest state in the Union

The Rocky Mountain Cordilleran States comprise *Montana*, *Idaho*, *Wyoming*, *Colorado*, and *New Mexico* DENVER (256), a smelting city, is joined by rail to LEADVILLE, where there are great **lead** and **silver** mines, now less important than formerly Irrigation enables the dry soil of these states to yield profitable crops, although their chief wealth is still in minerals.

The Plateau Cordilleran States include *Nevada*, *Arizona*, and *Utah*, the Mormon State VIRGINIA CITY, a mining town on the Comstock Lode, and the Mormon settlement SALT LAKE CITY on the Central Pacific Railway, are the chief towns of note. As most of the towns depend solely on mining, their population fluctuates with every change in the silver market.

The Pacific Cordilleran States are *California*, *Oregon*, and *Washington*. The fertile and sheltered Californian valley

produces **wheat**, **grapes** and other **fruits**, and groves of mulberry-trees utilised for **silk**-culture. In Southern California there are rich oil-fields producing immense quantities of petroleum which is especially valuable as the state contains little coal PORTLAND (258) (*Oregon*) and other harbours in the north export wheat, lumber, and canned salmon SEATTLE (315) (*Washington*), on Puget Sound, prospers on account of the neighbouring coal-fields, and exports much coal SAN FRANCISCO (506), on a great land-locked bay of the Pacific, entered by the Golden Gate, a passage one mile wide and five long, is the most important western harbour of America and the commercial centre of the Pacific States **Gold**, **quick-silver**, **wheat**, and **wool** are sent to it for export The imports of **tea** and **silk** from China, and **manufactures** from the eastern states and Europe are even more valuable. Mail steamers from Japan, China, and Australia, connect with the Atlantic lines by the Pacific railways The distance from SAN FRANCISCO by Cape Horn to NEW YORK is 13,200 sea-miles, and to Liverpool 13,500, by the Panama Canal the former passage is 5300 and the latter 7800 miles These states are developing rapidly, the population of California increased 60 per cent, and Washington 120 per cent between 1900 and 1910.

Alaska The large thinly-peopled territory of *Alaska* has scarcely been opened to trade except for the **fur-seal** fisheries on its shores, and among its fringing islands, and for **gold-mining** in the valley of the great river Yukon The rearing of **reindeer** is giving rise to trade in meat and hides.

The **railway system** of the United States is the most remarkable in the world for its extent, 255,000 miles (in 1920), and the rapidity with which the lines are constructed The older states on the east are covered with a close network of railways connecting the chief towns as in England Most of the western lines were built through an unpeopled country, and towns afterwards grew up along them The main through lines run east and west, transversely to the chief lines of river communication NEW YORK, CHICAGO, and ST LOUIS are the most important centres, to which through railways converge from all parts of the United States There are numerous junctions with the Canadian railways on the north, and several with the Mexican on the south The *Central Pacific*, with direct connection from NEW YORK and CHICAGO, runs from OMAHA westward

through *Nebraska* and *Wyoming* over the Rocky mountains, across the deserts of *Utah* and *Nevada*, and descends to OAKLAND, whence there is a ferry to SAN FRANCISCO The distance of 3300 miles between NEW YORK and SAN FRANCISCO is covered in about 5 days by express, and 10 days by goods trains The *Northern Pacific* connects DULUTH on Lake Superior with the wheat areas of *Minnesota* and *North Dakota*, and runs on to the west coast at PORTLAND (*Oregon*) Railway extension is going on rapidly in this region, a network of branches steadily advancing westward The *Atchison, Topeka* and *Santa Fé* connects ST LOUIS with SAN FRANCISCO across the high plains of *Arizona* south of the Rocky Mountains The *Southern Pacific* runs from NEW ORLEANS through *Texas* and skirts the Mexican frontier to LOS ANGELES on the coast of California

People. The people of the United States are characterised by energy and enterprise, the country claims to do $\frac{1}{3}$ of the mining, $\frac{1}{4}$ of the manufacturing, and $\frac{1}{5}$ of the agriculture of the world, and to contain $\frac{1}{6}$ of the accumulated wealth of civilisation In 1920, when the last census was taken, the population was 106 million, and its density 35 to the square mile Most are of English origin, but the additions by immigration now consist mainly of Italians, who formed one quarter of the total of 805,000 immigrants in 1921, and of British, Scandinavians, Russians and Finns, French, Germans, Austrians and Hungarians, the total annual immigration before the World War averaged 1,000,000 people **Slavery** was abolished in 1865 after the Civil War, and in 1920 there were 10 million coloured people in the southern states nominally exercising equal rights with other citizens The immigration of paupers and of Chinese is prohibited, the total number of immigrants for each year is limited and the proportion of each nationality admitted is fixed by law

The **government** is Republican, each state has its own legislature making local laws, which may restrict certain branches of trade such as the drug traffic A Congress of representatives from the states and delegates from the territories regulates the external affairs of the country, retaining the sole right of fixing and levying the duties on imports, which are high The production, import and sale of alcoholic drink is forbidden by the Constitution As in Canada, a **Homesteads Law** entitles any citizen or intending citizen to receive 160 acres of land free from Government on condition that he settles upon, and cultivates it The **army** now numbers 145,000 men, and is supplemented by a militia, the navy also has been greatly increased recently

The **coinage** has gold as a standard, the smaller coins are silver and nickel-bronze, the unit is the dollar, worth about 4*s* and divided into 100 cents Notes are issued both by banks and by the Governments of the several states The weights and measures are those of the United Kingdom, but the hundredweight is taken as 100 lbs , and the "short ton" contains 2000 lbs , while the gallon and bushel are slightly less than the British units of the same name

The **post-office** is a department of the central government The

telegraph system is largely in the hands of the Western Union Telegraph Company, which had in 1921 246,000 miles of line **Telephone** communication is used throughout the whole country, one company alone had 27 million miles of telephone wires in use in 1922

Time As the United States range through 58 degrees of longitude it is impossible to have one standard time For railway and telegraph purposes both in the States and in Canada there are 5 standards, differing by 1 hour, each applicable in a belt 15° wide running north and south The minutes are thus the same all over North America, but the hours differ, e g when the clock at WASHINGTON points to 12 20, that at ST LOUIS is 11 20, and on the Pacific coast 9 20

American Standard Time

Name of time	Atlantic	Eastern	Central	Mountain	Pacific
Central Meridian	60° W.	75° W	90° W.	105° W	120° W
Where used e g.	Halifax	New York	Chicago	Denver	San Francisco
At Greenwich noon	8 A M	7 A M	6 A M	5 A M	4 A M

Trade Before the War the United States ranked third in the value of its external trade, which was about half that of the United Kingdom, little less than that of Germany, and greater than that of France In 1886 138 million pounds worth of foreign goods were *imported*, and 140 million pounds worth of native productions *exported*, eight-tenths being agricultural produce In 1922 the imports were 521 million pounds, and the exports 754 million The principle of **protection** is enforced by a high tariff on all commodities which can be produced in the States Only certain raw materials, books not printed in English, and a few unimportant articles are admitted free The United Kingdom receives freely one-third the exports of the United States, and sends less than one-tenth of the imports, Canada does about one-ninth of the trade, both in imports and exports, and Cuba and Japan come next with considerably less

Chief Articles of Trade in million pounds sterling

Exports	1900	1910	1920	Imports	1900	1910	1920
Raw Cotton	48	90	227	Textiles manufactured	24	36	49
Wheat and Flour	28	19	164	Hides and Skins	12	22	74
Meat, Eggs, etc	37	26	154	Sugar	20	21	137
Petroleum	13	68	85	India-rubber and Gutta percha	6	21	56
Tobacco	6	8	64	Coffee	10	14	62
Iron and Steel	27	42	186	Chemicals	11	18	35

Shipping Only vessels built and registered in the United States are allowed to engage in river or coasting trade The United States shipping on sea, lakes, rivers and canals amounted in 1920 to 28,183 vessels of 16½ million tons, 18,800 of these vessels were steamers The Great Lakes are open for navigation on the average for about 230 days in the year The extensive foreign trade of the country is

now largely carried in American ships, but about half is still carried under foreign flags, British ships having the chief share Three-quarters of the foreign trade of the States is concentrated in the seven seaports, NEW YORK, NEW ORLEANS, BOSTON, PHILADELPHIA, BALTIMORE, SAN FRANCISCO, and GALVESTON Mail steamers set sail almost daily from the Atlantic ports to Europe, and as the United States mails are sent by the fastest vessels there is constant competition in speed The ships of the *Cunard*, *White Star*, and *American* lines deliver the mails in London from Southampton within 7 days after leaving NEW YORK

Distant Dependencies The United States are responsible for the government of various distant islands formerly independent or Spanish colonies

PORTO RICO, an island in the West Indies, between Haiti and the Lesser Antilles, is in many respects treated as if it were a territory of the United States The island is very fertile, producing large quantities of **sugar, tobacco** and **coffee** for export as well as oranges, pine-apples and other tropical fruit

VIRGIN ISLANDS of the United States were formerly known as the Danish West Indies The group comprises the islands of St Thomas, St Croix and St John The chief port of St Thomas has coaling and oil-fuelling stations **Sugar** and **cotton** are the leading exports

HAWAII or the Sandwich Islands in the North Pacific, 2000 miles west of San Francisco, now forms a territory of the United States The islands are extremely fertile, **sugar** and **rice** being grown in large quantities The capital and chief port is HONOLULU, a great centre for shipping in the Pacific Ocean

The **PHILIPPINE ISLANDS** were a Spanish colony until 1898 when they were annexed to the United States by conquest The group lies wholly within the tropics and extends from near Borneo towards Formosa, being about 6000 miles west of San Francisco The population includes several races, some of them still uncivilised, but trade is chiefly in the hands of Americans and Europeans Spanish is the language most largely used in business, but English is rapidly taking its place The area of the islands is slightly greater than that of the British Isles and the population is about **10** million The wealth of the country lies in its forests and agriculture, the mineral resources being as yet almost untouched The chief products for export are **Manila hemp, sugar, copra** and **tobacco** The capital is the great seaport of MANILA (283) on a fine harbour in the island of Luzon

GUAM, the largest island of the Marianas group, ceded by Spain to the United States in 1898, is now used as a naval station The products of the island are maize, copra, rice, sweet potatoes, coffee, cocoa and sugar

SAMOAN ISLANDS The island of Tutuila which became a possession of the United States in 1900 along with all the other islands of the group lying east of 171° east longitude, contains the only good harbour in Samoa, and is a naval station The chief product is copra

CHAPTER XIII

FRANCE

Configuration Agriculture Minerals Textiles and Manufacturing Towns Seaports Paris Rivers and Canals Railways and Towns Trade Government French Possessions in Africa, America, Polynesia, and Asia

Configuration The geographical position of France is particularly favourable for commerce, as the north-western coast runs nearly parallel to the south coast of England, the shallow west coast, with several estuaries, faces the Atlantic, and the south the Mediterranean Except for the low hills of Normandy and Brittany, the north-western half of France is a **plain** under 600 feet in elevation, from which the land slopes up toward a rugged plateau in the centre, and to the Ardennes, Vosges, and Jura on the east Four great navigable **rivers** give inland France access to the sea, the *Seine*, *Loire*, and *Garonne* flow westward over the plain to the Atlantic, the rapid *Rhône*, in a deep valley between the Cevennes (bounding the central plateau) and the Alps (which rise in the south-east of France), enters the Mediterranean The **climate** is temperate, warm on the southern slope, mild with a considerable rainfall over the western plains, but more extreme and drier in the interior

Agriculture Seven-tenths of the surface is cultivable land divided up into very small farms worked, as a rule, by peasant-proprietors **Wheat**, the chief grain-crop, grows in all parts of the country, but especially north of the Seine, **oats** are most cultivated in the north and north-east **buckwheat** in the north-east, while **rye** is the characteristic grain of the central plateau, and **maize** of the Rhône valley and south-western plains The export of cereals was formerly considerable, but for many years the imports have been in excess The **vine** is the typical cultivated plant, there are vineyards, and wine is made, in all parts of France except a strip about 100 miles wide parallel to the north-west coast (where orchards and cider-making predominate) and on the barren central plateau Before the *phylloxera* had wrought such devastation the annual wine-harvest of France reached **1800** million gallons, but since 1884 it has varied from about 500 to about **1500** million gallons

The chief wine-producing departments are *Hérault*, *Gard* and *Aude* on the Mediterranean, *Gironde*, south of the Gironde estuary, and the eastern districts around *Côte d'Or* (Burgundy) *Charente Inférieure*, formerly of the first rank, has suffered most severely from

phylloxera A large amount of wine has to be brought from Spain, Italy, and Algeria for home consumption, and quantities of wine are made for export from dried raisins imported from Southern Europe. The **olive** and **mulberry** trees are cultivated in the south The fertile northern departments yield two-thirds of the **beet** crop, which makes France nearly independent of foreign sugar, most of the **colza** for oil-making, and more than half the **flax** produced in the country. **Tobacco**, the growth and sale of which are Government monopolies, is produced almost exclusively in the valley of the Garonne and in Algeria **Wood** is the principal domestic fuel in France, forests, under Government control, occupy 25 million acres, mainly in the east and south-west The total area of the country is 136 million acres

Million acres under Crops

	Wheat	Oats	Vines	Rye	Potatoes	Barley	Maize	Beet
1910	16	10	4	3	4	2	1	1
1920	12	8	3	2	3	2	0 2	0 2

Cattle are fed on the grassy meadows of the western plains, and **sheep** on the barer pasturage of the central plateau, but the quality of the animals is inferior Much of the agricultural labour is done by **oxen**, and in the south **donkeys** and **mules** are often used instead of horses Fishing occupies 106,000 men along the shores, larger vessels visit the banks of Newfoundland and Iceland for cod **Oyster-culture** has become an important industry on the sandy Atlantic coast, especially at ARCACHON, and on the Mediterranean shore

Minerals All mining operations are conducted by the direct authority and under the inspection of the Government Office of Public Works The annual production of **coal**, now 25 million tons, was before the War 38 million tons, two-thirds of which came from the mines round ANZIN in the *Valenciennes* or Franco-Belgian field in the north These mines were destroyed during the war and as a compensation France obtained from Germany the coal-fields of the Saar basin. The *Central* coal-fields come next in importance, including the *Loire* coal-field and mines about ST ETIENNE, LE CREUSOT, and ALAIS There are sixteen other small coal-fields scattered over the country producing 5 million tons among them There is a yearly import nearly equal to half the production of the country, chiefly from Belgium, Britain, and Germany.

Iron is abundant, over 4 million tons of pig-iron being produced annually almost entirely from French ore LILLE

(201) on the *Valenciennes* coal-field is engaged equally in iron-making and textile manufactures, DENAIN and ANZIN, near it, have also an active iron and coal trade, although as the ore in the neighbourhood is nearly exhausted supplies have to be brought from other parts of France The blast-furnaces and steel-works of ST ETIENNE (168) and of LE CREUSOT, a small town built round an immense iron-foundry and engineering establishment which turns out most of the rails and locomotives required for the French railways, derive much of their ore from the mines of the central district *Meurthe-et-Moselle* is the department with the greatest number of iron-mines, producing four-fifths of the French supply, but it is far from coal NANCY (113), the largest town in that district, contains cotton-mills and engineering works **Lead**, found in the mountains of Auvergne in central France, is the only other metal much worked There are **salt**-mines on the borders of Switzerland, Germany, and Spain, but one-half of the supply comes from the salt marshes (*salines*) of the flat shores of the Bay of Biscay and the Mediterranean.

Textiles Cotton, woollen and silk factories employ each considerably more than 100,000 hands. **Woollen** goods take the first place amongst French exports, and as the home-grown wool is insufficient about three-quarters of the raw material necessary is imported This industry is localised in the north, the department *Nord*, with the towns of ROUBAIX (113), TOURCOING and FOURMIES, containing about one-third of the whole SEDAN on the frontier of Belgium, REIMS (76), a wine-town in *Champagne*, and ELBŒUF, on the Seine, are other wool centres The silk-worm breeding in the Rhône valley does not supply sufficient material for the **silk** manufacture which is the staple trade of the district, and large quantities of raw silk are imported from Italy and China Three-quarters of the trade is carried on near LYONS (561) on the Rhône, in the main line of communication between PARIS and MARSEILLES. It is the third commercial centre of France, and the greatest silk-market in the world ST ETIENNE contains the most extensive ribbon factories, and various branches of the silk

industry are pursued in GRENOBLE and other parts of the country A large quantity of raw **cotton** is imported and manufactured for home use and for export The two northern departments of *Nord* and *Seine-Inférieure* contain one-half of the factories ROUEN (124), near the mouth of the Seine, is the French Manchester with the chief cotton-mills of the country, LILLE, which is also the centre of the **linen** trade, and AMIENS (93), with velvet factories, manufacture much cotton

Lace-making, a characteristic French industry, employs great numbers of women at their own homes, the chief collecting centres are BAYEUX in Normandy, CAUDRY near CAMBRAI, CALAIS, and LE PUY in Haute Loire.

Porcelain is made at LIMOGES (90), in the centre of France, and fine art-pottery at SÈVRES, near PARIS

Seaports MARSEILLES (586) on the Mediterranean, with a movement of 14 million tons, is the chief harbour, practically monopolising the French traffic with Mediterranean ports, and through the Suez Canal with India, China, and Australia It is the second town in France for size and is the seat of many important industries, especially **soap**-making HAVRE (*Le Havre,* 163), at the mouth of the Seine, in the English Channel, is the second seaport, with an annual movement of 7 million tons, the import trade is chiefly in grain and raw materials from America for the northern manufacturing districts HAVRE was formerly the port of ROUEN, 75 miles up the Seine, but the river has been deepened to admit large steamers BORDEAUX (267), on the Garonne, at the head of the fine estuary of Gironde, is the chief wine-exporting town of France, PAUILLAC nearer the sea is its deep-water harbour. It imports coal, South American produce, and wine from Portugal, and exports wine and brandy. DUNKIRK, which is the third French seaport in the order of trade, CALAIS, BOULOGNE and DIEPPE, trade with English and North Sea ports ST NAZAIRE, at the mouth of the Loire, NANTES (183), 30 miles up the river, are minor seaports CHERBOURG is the chief port of call for liners in the Channel and CETTE on the Mediterranean has trade with Spain

STRASBOURG (167), with breweries, tobacco factories, and **goose-liver** potting works, and MULHOUSE (99), an important centre of the **cotton** trade, are the chief towns of *Alsace-Lorraine*, the Provinces regained by France from Germany in 1919 under the Treaty of Versailles.

PARIS (2900), to which canals, canalised rivers, and railways converge from all sides, is the capital, and the fourth largest town in the world PARIS in commerce and politics is the very heart of France, in taste and fashion it leads all countries Jewellery, artistic metal-work, fine leather goods, artificial flowers and millinery are amongst the more characteristic manufactures The *Bourse* or Stock Exchange ranks after those of London and New York The city is surrounded by fortifications through which the railways pass out and radiate over the country.

The **Canal and River system** of France is very complete, the waterways competing successfully in the transport of material with the railways There are 5000 miles of navigable rivers and 3000 of canals The *Canal du Midi*, 150 miles long, runs south-eastward from BORDEAUX along the valley of the Garonne to TOULOUSE (175), and thence down the valley between the Pyrenees and the central plateau to CETTE, saving a sea-passage of 2000 miles It has been proposed to construct a ship-canal for large vessels along this line. The *Rhône* is joined, through its tributary the Saône, by a canal passing between the Vosges and Jura mountains to the Rhine, by another crossing the central plateau to the *Loire*, and by a third to the *Seine* The industrial region in the north of France is covered by a network of water-ways connecting its rivers with those of Germany, Belgium, and Holland, and here the canal traffic is heaviest

Railways There are 30,000 miles of **railway**, divided amongst six great companies, whose lines scarcely overlap The *Northern* occupies the section between BOULOGNE and the frontier of Germany, with connections to Berlin, Leningrad (Petrograd), Brussels, and by the Calais-Dover passage to London (7 hours from PARIS) It forms a network over the busiest mining, manufacturing and agricultural districts of the country The *Western* sends one main line down the Seine valley through ROUEN to HAVRE and DIEPPE, another to the naval harbour of CHERBOURG in Normandy, and a third to that of BREST in Brittany, with branches to the chief intervening towns The *Paris-Orleans* serves the area between the Loire and the Garonne, including the wine-producing district of *Charente*, the chief centres of traffic are ORLEANS, TOURS, and POITIERS At BORDEAUX it connects with the *Southern* lines, one of which runs into Spain at BAYONNE, leading to Madrid and Lisbon, another by TOULOUSE to CETTE,

MONTPELLIER and Spain The *Paris-Lyons and Mediterranean* has the greatest amount of traffic, and has two lines to the south traversing the vine-growing districts of Burgundy with the wine centres DIJON and MACON, and the silk and iron making towns of the Upper Loire and Rhône valleys The main line runs south-east to DIJON (whence a branch leads to Berne), turns south down the valley of the Saone to MACON (the junction for the Mont Cenis tunnel route to Italy), and on by LYONS to MARSEILLES and Italy The *Eastern* railway brings the vineyards of *Champagne*, and the ironworks of *Meurthe-et-Moselle* into communication with the capital One line through CHALONS, a wine centre, and NANCY, enters Lorraine by AVRICOURT, another passing the fortifications of BELFORT goes into Alsace and Switzerland, connecting with Austria by the Arlberg tunnel, and with Italy by the St Gotthard tunnel

The telegraph system embraces 111,000 miles of line Greenwich time has now been adopted in France for railway and all other purposes

Trade. The trade in grain and wine, the most important articles classed under food and drink, varies with the harvest In 1882 the grain imports cost 20, the wine 13, in 1886 the value of grain required was only 10, but of wine 20 million pounds, in 1891 grain imports cost 21 and wine 16, and in 1920 grain imports cost 116 and wine only 24 The export of wine is nearly constant at 9 million pounds The chief imports of raw material are wool costing 83, cotton costing 62, and silk costing 65, and the chief exports are manufactures of cotton and silk, each worth 50 million pounds, and woollens worth 38

Trade of France in million pounds sterling[1]

	Raw Materials			Food and Drink		
	1900	1910	1920	1900	1910	1920
Imports	121	174	1006	33	56	475
Exports	44	73	244	30	34	104

	Manufactures			Total		
	1900	1910	1920	1900	1910	1920
Imports	34	56	515	190	286	1996
Exports	90	137	678	164	244	1026

The French mercantile marine only carries one-quarter of the French commerce The United Kingdom stands first both in the export and import trade of France, receiving one-quarter of the exports, and sending one-seventh of the imports The United States, Belgium and Germany rank next in order There is a partial recognition of free-trade principles by commercial treaties with the United Kingdom and some other countries, but even to these the tariff on imported goods is high Most of the towns in France levy a small tax (*octroi*) on goods brought within the gates

[1] The pound is taken at 25 francs, but in 1920 the rate of exchange makes the comparison misleading

Government. At the census of 1921 the area of continental France was 212,660 square miles, and the population 39 millions, giving a density of 184 to the square mile The country is divided into 90 **departments**, but an older division into provinces is often used popularly The **Government** is republican, and every man has a vote Agricultural, commercial, and technical **schools** are provided by the State in the chief centres of industry, and primary education is compulsory The **people** are distinguished by their vivacity, enthusiasm, and good taste, and for the elegance and artistic finish of their manufactures The heavy taxation necessary to maintain a standing **army** of over 500,000 men, forts along the land frontiers, and a large navy and air-force, and the compulsory military service of all men over 20, are obstacles to industrial success

The coinage has a gold standard, the unit being the **franc** (valued, under normal conditions, at $9\frac{1}{2}d$, or $25 = £1$) divided into 100 centimes The **sou** (5 centimes $= \frac{1}{2}d$) is used as a unit for small sums The weights and measures are those of the metric system

Possessions in Africa **ALGERIA** on the north coast of Africa, with the two active seaports of ALGIERS (206) and ORAN (141), is politically part of France, and the adjacent country of **TUNISIA** with its capital and port TUNIS (171) is a protected state The chief exports from these countries are **grain, wine, fruit, iron-** and **zinc-ores, olive oil** and **alfa** (esparto grass) South of the settled departments of Algeria, French control spreads over a vast extent of the Sahara, the rim of which has been rendered of commercial value by boring artesian wells and planting **date**-palms The French possessions in the **WESTERN SUDAN** comprise the **SENEGAMBIA** and **NIGER TERRITORIES**, including the trading town of TIMBUKTU, and extend to the western shore of Lake Chad, the Algerian desert, and joins the coast possessions of **SENEGAL, FRENCH GUINEA, IVORY COAST,** and **DAHOMEY FRENCH EQUATORIAL AFRICA** is a vast territory in equatorial West Africa, reaching from the Congo river to Lake Chad On the east coast is the **SOMALI COAST** protectorate Including the great island of **MADAGASCAR** and the mandated territories of Togo and Cameroons, the French sphere in Africa amounts to about 5 million square miles The development of Madagascar is proceeding through the construction of roads and railways, and the opening up of the mineral wealth of the island including **gold** TAMATAVE in the north-east is the principal port

Possessions in America and Oceania ST PIERRE and MIQUELON, small islands serving as fishing stations off Newfoundland, GUADALOUPE and MARTINIQUE in the West Indies, producing sugar and cocoa, and FRENCH GUIANA with gold-mines, are the only possessions in America

NEW CALEDONIA, an island midway between Australia and Fiji, a convict settlement, exporting coffee and nickel-ore, TAHITI with other islands in the Pacific, and RE-UNION, in the Indian Ocean, growing sugar, coffee, and vanilla, are French colonies.

Possessions in Asia. SYRIA, the former Turkish province assigned under mandate to France, includes ALEPPO (140) and DAMASCUS (170), two important trading towns on the caravan routes from the East linked up by rail with BEIRUT on the Mediterranean which has textile manufactures and steamer trade PONDICHERRY in India, south of Madras, ships coolies to the plantations of other tropical colonies. The vast colonies and protected states of French INDO-CHINA, comprising *Cochin China*, *Cambodia*, *Annam*, *Tonking* and *Laos*, with the chief town SAIGON (82), a fortified commercial harbour, yield an important supply of rice, spice and other products, and form a valuable market for French manufactures The territory of KWANGCHOW WAN, leased to France by China, is under the Governor of Indo-China, and French influence is strong in southern China as well as in eastern Siam

CHAPTER XIV

GERMANY (*Deutsches Reich*)

Position Configuration Agriculture Minerals Manufactures Towns of the Ruhr coal-field, of South-western Germany, and of the Silesian and Saxon coal-fields Seaports Berlin Railways Government Trade *Danzig*

Position. The German Republic has the most central position in Europe, Denmark adjoins it on the north, Poland on the east, Austria, Switzerland and Czechoslovakia on the south, France, Belgium, and Holland on the west The only sea boundaries are the North Sea from Holland to Denmark, and the Baltic from Denmark to Lithuania.

Configuration. The coasts are extremely shallow and beset with sand-banks, but are well marked by buoys and lights A ship-canal across Jutland from the Elbe to Kiel was opened in 1895, and now the largest steamers may pass between the North Sea and the Baltic The whole south of Germany is mountainous, but the northern half from Holland to Poland is a wide infertile plain Five great navigable rivers traverse the country The *Danube* flows east through Southern Germany into Austria The *Rhine*, the chief water-highway of Germany, is joined to the Rhône, Seine, and Danube by canals It flows west from the Lake of Constance, turns north through a narrow and extremely fertile plain between the Black Forest and the Vosges, then swerves westward at MAINZ and passes through a picturesque gorge into the northern plain The *Weser* and *Elbe* flow north-west to the North Sea, and the *Oder* northward to the Baltic The climate varies according to the height of the land and distance from the sea, being mildest in the north-west, and most extreme in the east.

Agriculture. The northern plain of Germany, although not naturally fertile, produces immense crops of potatoes and rye, which form the chief food of the people Oats and Wheat are also grown largely, the latter especially in *Silesia*, *East Prussia*, and the *Rhine Provinces* The imports of wheat and rye exceed the exports, but large quantities of potatoes are sent abroad, the annual harvest of these tubers exceeding 40 million tons

Million acres under Crops, 1920

Rye	Oats	Potatoes	Wheat	Barley
10	8	6	3 5	3

The sugar-beet, the chief industrial plant, is most largely grown in the Prussian provinces of *Saxony* and *Silesia*, where sugar is manufactured, the German production of sugar averages 1 million tons per annum **Flax** ranks next in importance in the same provinces,

and eastward along the Baltic Hops are grown mainly in the south, especially in *Bavaria*, for the great breweries of MUNICH (*Munchen*, 631), the head-quarters of the German beer trade The vine is cultivated for wine-making in the plain of the Upper Rhine, and on the terraced slopes of the tributary valleys Fruit and tobacco are also largely grown in the same region One-fifth of the surface of Prussia, and one-third of Southern Germany, are covered with forests under Government control, which supply the domestic fuel of the country and timber for export

Cattle-rearing is the leading industry of *Schleswig-Holstein*, most sheep are raised in the north of *Prussia*, but the finest wool is obtained in *Saxony*, horses are bred for the army in *East Prussia*, and swine are kept principally in *Westphalia* Dairy produce is largely exported

Minerals There are extensive deposits of mineral fuel in the three coal-fields of the *Ruhr* valley in Westphalia, *Upper Silesia*, and *Saxony*, where the density of the population comes to a maximum (over 800 to the square mile), and a few detached coal areas, producing under normal conditions in all 140 million tons per annum About 100 million tons of lignite are also raised Iron-ore usually occurs in the same localities, thus fixing the sites of the great metal-working and manufacturing towns Over 6 million tons of pig-iron are produced annually, Germany ranking next to the United States and Great Britain in this industry The mines of the Erzgebirge near FREIBERG in *Saxony*, and those of the Harz, make Germany the first silver-producing country in Europe Upper Silesia and the Rhine district have the second largest output of zinc in the world, the Harz and the Erzgebirge also contain ores of copper, lead, and tin which have been worked for centuries and are still richly productive Mines in many parts of the country afford a plentiful supply of salt, those at STASSFURT are especially remarkable, yielding potash salts as well

Manufactures Iron and steel are first in value, then textile fabrics —cotton, woollen, linen and silk—glass (especially scientific apparatus), porcelain and paper In the production of fine chemicals, dyes, and drugs Germany has no rival Ships are built at HAMBURG, and at most of the Baltic ports, especially KIEL

Towns of the Ruhr Coal-field The coal-field of the Ruhr in *Westphalia* is the busiest district in Germany The outlying towns of BARMEN (156) and ELBERFELD (157), with extensive cotton-mills, silk factories, and iron-works, are the largest of the district and are linked by a chain of industrial villages to the river-port DUSSELDORF (407), about 20 miles distant, itself the focus of the trade of the Lower Rhine A canal from the Rhine to the Ems was made to admit of Ruhr coal being sent cheaply to the sea, and

reduce imports from England DORTMUND (295) has the chief coal and iron mines ESSEN (439) is the seat of Krupp's works, world-famed for **cast-steel** goods and cannon, and in extent comparable only to those of Le Creusot and Elswick DUISBERG (244), on the Rhine, has cloth factories SOLINGEN and REMSCHEID are the chief iron-working and cutlery towns of the district CREFELD (125) has become the centre of German **silk**-weaving and is a rival to Lyons in this industry

Towns of South-western Germany COLOGNE (*Koln*, 634) is prosperous through the steamer traffic on the Rhine, and the frontier railway transport It contains sugar-refineries, cotton-mills and manufactories of **Eau-de-Cologne** AACHEN (*Aix-la-Chapelle*, 145), on an extension of the Franco-Belgian coal-field, is engaged in **woollen**-weaving FRANKFURT-on-the-Main (433), one of the first financial towns in Europe, concentrates the commerce of South-western Germany, most of which passes through MAINZ (*Mayence*, 108) at the junction of the Main and Rhine MANNHEIM (229), at the junction of the Neckar, is the highest point reached by steamers of 1000 tons

STUTTGART (309) in *Wurttemberg*, on the high land midway between the Rhine and the Danube, is a railway centre, and has an important publishing trade and **horse** market NURNBERG (*Nuremberg*, 353), with a fine commercial situation in *Bavaria*, is far from coal-mines, and largely engaged in the manufacture of fine metal-work, dyes, **pencils** and wooden **toys**

Towns of the Silesian Coal-fields These coal-fields, extending into Czechoslovakia and Poland, are second in importance but nearest BERLIN, to which coal is brought by the Oder and its canal system BRESLAU (528), on the Oder, is the metropolis of a rich agricultural, manufacturing and mining district GORLITZ (80) has great woollen factories, BEUTHEN and GLEIWITZ in the extreme south-east are busy mining towns, sending out **coal**, **iron** and **zinc** HIRSCHBERG contains (next to BIELEFELD in *Westphalia*) the largest **linen** industry of Germany

Towns of the Saxon Coal-fields The mining district of

Saxony ranks third in coal but first in metals In the Prussian *province* of Saxony, which contains the mines and forests of the Harz, MAGDEBURG (285), on the Elbe, with extensive **sugar**-refineries, is the commercial centre of a group of towns manufacturing sugar, spirits, and chemicals, and mining **lignite** and rock-salt HALLE (182), on the Saale, has also large factories and salt-works In the *republic* of Saxony DRESDEN (587), on the Elbe, carries on numerous manufactures, including photographic materials, MEISSEN, near it, has great porcelain works producing "Dresden China" The commerce of LEIPZIG (604) is stimulated by annual **fairs** at which accumulations of **leather**, **furs** and **books** change hands There was more printing and publishing done here than in any other town in the world, and corresponding activity in type-founding and bookbinding It is the third city of Germany in commercial importance, BERLIN and HAMBURG alone coming before it CHEMNITZ (304) is well called the *Saxon Manchester* on account of the number of **cotton** factories and engineering works it contains, ZWICKAU to the south-west has the largest **collieries** and ironworks of the district The inhabitants of the numerous smaller towns are engaged in mining iron, silver, copper and lead from the *Erzgebirge*, and in various branches of textile industry

BRUNSWICK (139), and HANOVER (392), with lignite pits, lie between the Saxon and Westphalian industrial districts, they produce **sugar** and **textile** fabrics

Seaports HAMBURG (with suburbs, 986), on the river Elbe, 60 miles from the sea, can be reached at high tide by the largest steamers, and is the first trading harbour on the continent, having a movement of over 16 million tons The port, which is magnificently organised, includes that of ALTONA (169) A small part of the harbour retains **free-port** privileges, being outside the *Zollverein* The port of BREMEN (270), 50 miles up the Weser, is less accessible, but much of the trade is done at BREMERHAVEN, a subsidiary port at the mouth of the river BREMEN is a great **tobacco** market It is the head-quarters of the *North German* (*Norddeutscher*) *Lloyd Steamship Company*, and most of the German

emigrants pass through it or HAMBURG WILHELMSHAVEN on the North Sea, and KIEL (205), on the Baltic, are naval stations The Baltic usually ceases to be navigable in November on account of ice, but some of the Baltic harbours remain open in mild winters The use of ice-breaking steamers has extended their usefulness STETTIN (234), on the Oder, the chief Baltic port, is the nearest seaport to BERLIN, 80 miles by rail, and the natural outlet for the forest province of *Pomerania*, and the mining districts of *Silesia* It has important ship-building works Its deep-water harbour is SWINEMUNDE KONIGSBERG (261), farther east on the Pregel, is a seaport exporting oats, flax, rye, timber, and amber, and before the war imported large quantities of tea for Russia

BERLIN (3800), on a sandy and infertile plain, equidistant between FRANKFURT-on-the-Oder and MAGDEBURG, on the Elbe, is the seat of the government, and its Exchange was second only to that of London Coal and iron are brought from *Silesia* and elsewhere for its great engineering works and textile factories The manufacture of electrical apparatus, and artistic metal-work, is a special feature, and there are great breweries

Railways. BERLIN is the centre of the railways and canals of the northern plain, and now of Germany, but there is no unity of plan in the railway system One through line runs east from BERLIN to KÖNIGSBERG and on to Russia, another through FRANKFURT-on-the-Oder to BRESLAU and Poland The railway to DRESDEN connects with the line to Prague and Vienna, that going south-east to LEIPZIG and MUNICH communicates with Italy by the Brenner Pass through the Austrian province of Tyrol BERLIN has direct lines running west to HAMBURG, to BREMEN, through HANOVER to Rotterdam, through MAGDEBURG, COLOGNE and AACHEN to Brussels, and through HALLE, ERFURT, and FRANKFURT-on-the-Main to Paris The most important lines in the south are those following each bank of the Rhine from COLOGNE to Basel on the Swiss frontier, the outlet of the Westphalian manufacturing district to Italy through Switzerland and the St Gotthard Tunnel

Government The German Republic is a confederation of 18 separate states, each governed for local affairs by its own Council The area of the Republic is 182,000 square miles, and the population 60 million, or 328 to the square mile Two-thirds of the area and of the people belong to *Prussia* (*Preussen*), in the north of Germany,

Bavaria (*Bayern*) has a population of 7 million, *Saxony* (*Sachsen*) 5 million, *Wurttemberg* and *Baden* have each 2 million, *Thuringia*, *Hamburg* and *Hesse* have 1 million each, the other 10 little scattered states contain 3 million people between them The Government consists of two houses, the **Reichsrat** of delegates from the various governments, and the **Reichstag** of members elected by the people The legislature of the Reichsrat takes charge of the external commerce and tariffs, the railways and the post-office for the whole Republic There are 36,000 miles of railway line, almost all belonging to the State, and 138,000 miles of telegraph line The **metric system** of weights and measures is in use, the meter-centner of 50 kilograms or 110 lb being the unit most often employed The *mark* (pre-war value 1*s*), divided into 100 pfennigs, is the unit of **coinage**, which normally has gold as a standard Germany having lost the war, the existing **army** was disbanded in 1919, and in its place, according to the terms of the Peace Treaty, a national Defence Force (*Reichswehr*) consisting of 100,000 men was formed Education is compulsory, and the system of **technical education** is more complete than that of any other country The general application of scientific principles to manufacturing operations, the readiness of the merchants to suit the taste of customers, together with the industry, patience, and intelligence of the workmen, and a strong patriotic spirit leading to great efforts towards the improvement of the position of the nation, up to the year 1914 led to a great development of German trade But on the outbreak of the Great War Germany's foreign trade collapsed

Trade The **Zollverein** or Customs League of Germany and Luxembourg, which was in force before the War, applied to all parts of the country except a small portion of HAMBURG, which retained its old free-port privileges but practically formed only a huge bonded warehouse German trade policy is that of **protection** The *exports* of home produce and the *imports* of goods for consumption in the *Zollverein* for the five years before 1886 balanced almost exactly at about **160** million pounds, but the admission of HAMBURG greatly increased that sum, the average trade for the five years 1888—1892 being **250** million pounds of imports and **225** of exports, and for 1897—1901 the imports were worth **280** and the exports **214** million pounds The trade statistics for the period 1906—1910, when the imports averaged **412** and the exports **331** million pounds, are those of the *Wirtschaftsgebiet* or Economic Union, and exclude only the commerce of Heligoland and a few districts of Baden On account of the difficulty of internal transit in some parts of Germany and the number of foreign countries it touches, one part of the empire often exports commodities that another part requires to import, e g North Germany exported wheat to England, Bavaria imported it from Austria

Trade of Zollverein (1910 *Wirtschaftsgebiet*) *in million pounds*

Imports											
Textiles		Food & Drink		Metals		Leather		Chemicals		Machinery	
1900	1910	1900	1910	1900	1910	1900	1910	1900	1910	1900	1910
53	79	79 5	110	18	25	11	30	16 5	21	5	3
Exports											
45	59	21	40	27	51	13	30	20	36	11	26

Before the War the greatest amount of trade was with the United States, the United Kingdom, Russia and Austria-Hungary, that with the United States and Russia being especially for imports The chief imports from the United Kingdom were cotton and woollen manufactures, machinery, iron, herring, and coal, of an average value of 35 million pounds, the exports sent in return include sugar, grain, eggs, timber and animal products, worth on the average nearly 47 million pounds The large British import of German sugar (over 9 million pounds worth in recent years) greatly damaged the trade of the West Indian colonies

DANZIG (*Die Freie Stadt Danzig*)

The old German port of Danzig and the adjoining territory with an area of 750 sq miles, was constituted a Free City by the Treaty of Versailles in 1920 The port at the mouth of the Vistula is the only gateway to Poland and the Treaty provides that Poland shall have the unrestricted use of the port for the free passage of imports and exports

CHAPTER XV

NORTH-WESTERN EUROPE

Belgium Configuration Resources Trade Towns Belgian Congo *Holland* Configuration Commerce Towns Dutch Colonies *Denmark* Danish Colonies *Iceland Sweden* Configuration Resources Towns and Trade *Norway* Towns and Trade *Baltic States*

BELGIUM (*Belgique*)

Configuration The land, commencing at the northern frontier of France and bounded by Germany on the east, slopes from the **mountain** region of the *Ardennes* in the south-east, to the great North European **plain**, which comprises most of Belgium and the whole adjoining country of Holland The *Schelde* (*Escaut*) crosses the western part of Belgium from France to its estuary, which opens on the North Sea directly opposite the Thames The *Meuse* (*Maas*), with its tributary the *Sambre*, crosses Belgium and joins the *Waal*, one of the branches thrown off by the *Rhine*

Resources The Franco-Belgian or *Valenciennes coal-field* extends across the south-eastern portion of Belgium in the valley of the Sambre, and over 20 million tons of **coal** are raised annually About 2 million tons of pig-iron are manufactured, chiefly from ore imported from Luxembourg The zinc-mines, once very productive, are now nearly exhausted In the plains industrial plants such as **flax** and **sugar-beet** are largely cultivated, hence Belgium is pre-eminently a manufacturing country The population is very dense, 640 per square mile, and the people are thus compelled to be industrious

Trade Belgium trades chiefly with Germany, France, the United Kingdom, and Holland, importing grain, raw **textile** materials and timber largely from America, and exporting **yarn, cloth, coal, iron,** metal manufactures, and glass The **coinage** is the same as in France, and French, the official language, is spoken by half the people, the others speak Flemish, which resembles Dutch, the language of Holland The railway system is more complete than in any other country

Towns The lowland towns of Belgium are as a rule engaged in commerce and textile manufactures BRUSSELS (*Bruxelles*, with suburbs, 775) manufactures linen, lace, and carpets, it is the capital, and the central point for railways and canals Steamers of 500 tons can reach it from the sea ANTWERP (*Anvers*, 304), on the estuary of the Schelde, is

one of the chief harbours of Europe, doing a great import trade and exporting the manufactures of Belgium and Germany MALINES (*Mechelen*, 59) has lace manufactures GHENT (*Gand*, 165) is the centre of the **cotton** and **linen** weaving, which are also carried on in COURTRAI and TOURNAI LIEGE (*Luik*, 165) is the chief town of highland Belgium, with its suburb SERAING it forms the centre of the **iron** trade, possessing great machine shops and **firearm** factories NAMUR, CHARLEROI, and MONS, all manufacturing iron and **glass**, form a chain along the line of the coal-field to the French frontier VERVIERS (42), with extensive **woollen** factories, is one of the chief cloth markets of Europe OSTEND is a pleasure resort with a busy harbour, doing a great passenger trade with English ports

The **BELGIAN CONGO** (*Congo Belge*), formerly the Congo Free State (founded in 1882 by Leopold II, King of the Belgians) was annexed by Belgium in 1908 The colony extends from the mouth of the Congo over nearly the whole basin of that river, reaching Lake Tanganyika in the east The Congo is navigable from the sea to MATADI, whence a railway 250 miles long has been made to LEOPOLDVILLE the capital, on Stanley Pool above the cataracts From this point the river is navigated by steamers for 1000 miles to Stanley Falls, and many of the tributaries can be ascended for hundreds of miles Much copal, ivory, india-rubber and palm-nuts come down the river, these forming the chief exports In the district of Katanga in the south-east of the colony valuable minerals (chiefly copper) have been found

HOLLAND or THE NETHERLANDS

This country occupies the North Sea coast between Belgium and Germany, and includes the shallow Zuider Zee, a great part of which is now being reclaimed as dry land

A strip along the North Sea coast is below sea-level, the sea being kept out by *dykes*, and the land, divided up into nearly water-tight enclosures called *polders*, is kept dry by continual pumping by steam-engines or windmills Wind is utilised in Holland as a supply of

energy more than in any other country Holland is simply the delta of the *Rhine*, and being perfectly flat it is netted over with canals, which in some cases lie below the level of the sea, or run along the top of the dykes beside the railway lines In winter they are often frozen, as the climate is somewhat severe, the warm Gulf Stream water not entering the North Sea

Holland yields no mineral commodities except a very little coal, mined in Limburg, its agriculture, although extensive, is subordinate in importance to cattle-rearing, but on account of its seaports, its command of the Rhine trade of Germany, and its large colonial possessions, this country is almost exclusively commercial The chief trade of Holland is with Germany, the United Kingdom, and Belgium the customs duties charged are low, and are not imposed for protection Most of the trade is in the import and re-export of colonial produce, margarine (artificial butter), butter and cheese being important home exports Metric weights and measures are in use as in Belgium, but the unit of coinage is the Guilder or Florin, worth *1s 8d* divided into 100 cents

Towns of Holland AMSTERDAM (647), built on ninety islands on the *Zuider Zee*, is the chief industrial town, and is directly accessible to large ships by a canal straight into the North Sea HAARLEM (77) is famed for the characteristic Dutch industry of tulip-rearing, and has a large trade in flowers ROTTERDAM (516), on the Maas, the chief outlet of the Rhine, is the greatest seaport and commercial centre, and is much occupied in the transit trade of North Germany THE HAGUE (*'s Gravenhage*, 355), the capital of Holland, and UTRECHT (140), are business towns GRONINGEN (91) in the grazing region of the north has cattle markets FLUSHING (*Vlissingen*), on the Schelde, and HOOK OF HOLLAND, near ROTTERDAM, are railway ports on the through routes between England and Germany

The **Dutch Colonies** are 64 times as large as the mother country The **DUTCH EAST INDIES** extend amongst the islands from Sumatra to New Guinea and export sugar, coffee, tea, rice, indigo, cinchona, spices, tobacco, tin, and petroleum, which are shipped almost exclusively to Amsterdam and Rotterdam in the first place BATAVIA (140) in Java is the most important seaport, but SURABAYA (160) is larger. The **DUTCH WEST INDIES** include **SURINAM** or **DUTCH GUIANA** in South America, and the island of **Curaçao** with its dependencies

SCANDINAVIAN COUNTRIES

The lands bordering the entrance to the Baltic are peopled by the Danes, Norwegians and Swedes, forming the Scandinavian group of nations with similar languages

The metric system is now compulsory in the three Scandinavian kingdoms, the old weights and measures were nearly the same as those of the United Kingdom The coinage unit for Denmark, Sweden, and Norway is the *krone* (worth 1*s* 1½*d*), divided into 100 ore

DENMARK consists of the low peninsula of *Jutland* and the islands lying in the Kattegat at the entrance to the Baltic The **Little Belt**, a channel between the peninsula and *Funen*, is narrow and difficult to navigate, the **Great Belt** between *Funen* and *Zealand* is the only channel deep enough to admit large war-vessels, the **Sound**, which is most used by merchant ships, leads between *Zealand* and the mainland of Sweden It is very rarely blocked by ice

The chief **products** are those of the farm, **agriculture** being highly organised and efficient **Butter** is an export of increasing value Most trade is done with the United Kingdom, Germany, the United States, and Sweden Coal and textiles are the chief imports for home consumption

COPENHAGEN (*Kjobenhavn* = the merchant's harbour, 561) on the Sound is the capital and a free port carrying on a large trade AARHUS and AALBORG, harbours on the east coast of Jutland, export grain, cattle, and dairy produce ESBJERG on the west coast is developing rapidly ODENSE in *Funen* has some general trade, and SKAGEN at the Skaw has a large fishing industry

The **Danish Colonies** comprise the **FAEROES**, and **GREENLAND**, where cryolite is mined, otherwise fishing and eider-down gathering are almost the sole resources

ICELAND, an independent state united with Denmark under one Sovereign, has fishing and the rearing of ponies, cattle and sheep as its chief industries.

SWEDEN (*Sverige*)

Configuration and Climate Sweden occupies the eastern and southern portion of the great Scandinavian peninsula. From the mountainous highland in which the boundary with Norway lies the plateau sinks in terraces eastward to a plain along the Gulf of Bothnia, widening in the south Here there is a severe continental climate, the seaports being closed with ice all winter On the southern plain two great lakes, *Vaner*, and *Vatter*, connected by canals, give passage to small vessels between the Kattegat and Baltic

Resources Great deposits of iron, some of it the finest ore in the world, occur all over the country, there are zinc, copper, and silver mines in the south-east, but coal is almost entirely absent Vast pine-forests cover the mountain-slopes, and innumerable rapid streams with magnificent waterfalls supply power for cutting up timber and carry it to the seaports Grain is grown mainly on the southern plain, where the chief crop is oats Cattle-breeding is of some importance, and in the north the Laplanders rear reindeer The manufactories include ironworks, wood-working establishments of all kinds, pulp mills, many lucifer-match factories, chemical works, breweries, and distilleries Electrical energy is widely utilised for industrial purposes, the great waterfalls remaining unfrozen in winter and furnishing an inexhaustible supply of power

Towns and Trade Nearly half of the exports consist of timber, wood-pulp and paper, wooden manufactures, and one-quarter of the trade is with Great Britain There is comparatively little trade between Norway and Sweden STOCKHOLM (420), the capital, and chief commercial town, stands at the Baltic entrance of Lake Malar UPPSALA, DANNEMORA, with iron-mines, and GAVLE, a timber-port on the Gulf of Bothnia, lie to the north, FALUN, where copper is mined, to the north-west, and NORRKOPING at the head of a short fjord of the Baltic Sea, with textile factories, to the south-west, all within a radius of 120 miles from the capital MALMO in the extreme south opposite Copenhagen has the chief trade with Germany and Denmark, while GOTHENBURG (*Goteborg*, 202), on the Kattegat entrance to the lakes, is the principal harbour for British trade, and the most active in the kingdom Its chief import is coal, it has many factories, including great match factories, engineering works, and ship-yards

NORWAY (*Norge*)

Configuration and Climate On the western side the **Scandinavian peninsula** is a high barren *plateau* penetrated by *fjords*, narrow winding arms of the sea, of great depth, and fringed by a multitude of islands, including the important *Lofoten* group Here the **climate** is usually wet, and milder than any other part of the world in so high a latitude (70° N), the fjords being always kept free from ice by the Gulf Stream drift

The main resources of the country are **agriculture**, the **fisheries**, the **forests**, and the shipping The capture of cod, haddock, herring and whales, the preservation of fish, and the manufacture of cod-liver oil employ a large part of the population The mercantile marine is large, and Norway does a great carrying trade for other nations Until 1905 Norway, although otherwise entirely separate from Sweden, had the same king and the same consuls

Towns and Trade The principal exports are timber and wooden goods, fish and fish products, and paper or wood-pulp More than half the trade is with Great Britain and America CHRISTIANIA (258) on a fjord at the head of the Skagerrack, is the capital, chief harbour, and the one industrial town STAVANGER, BERGEN (91), the head-quarters of the fisheries, and TRONDHJEM, are the other important harbours, each situated on a fjord of the west coast DRAMMEN has a large trade in logs and wood-pulp HAMMERFEST, the most northerly town in Europe, is, like TONSBERG and SANDEFJORD, a centre for whale fishing

BALTIC STATES

FINLAND, ESTONIA, LATVIA and **LITHUANIA** which formerly were part of the Russian Empire are now independent republics Finland is a country of immense forests, and lumbering is the main industry HELSINGFORS (198), the capital and chief seaport exports timber, wood-pulp, paper and matches RIGA (185), the capital of Latvia and REVEL (123), the chief town of Estonia export timber and flax, and Lithuania in addition to these commodities exports dairy produce through MEMEL (141).

CHAPTER XVI

EASTERN EUROPE

Austria Configuration Resources Trade Towns *Hungary* *Czechoslovakia* Configuration and climate Resources Trade. Towns *Poland* *Russia* Extent and configuration Rivers Mineral Resources Agriculture Trade Towns *Balkan States* The Danube România, Yugoslavia, Bulgaria, Greece, Turkey, including Asiatic Turkey

AUSTRIA (*Oesterreich*)

THE **Austrian Republic** consists mainly of the German-speaking part of the former Austro-Hungarian monarchy It includes the old provinces of Upper and Lower Austria, crossed by the *Danube* valley which broadens out into the plains around Vienna, the only extent of lowland in the country, and the alpine provinces of Vorarlberg, Tyrol, Salsburg, Styria and Carinthia occupied almost entirely by the Eastern Alps These mountains are drained by several tributaries of the *Danube*, to the north are the *Inn*, *Salzach*, *Traun* and *Enns*, the last two being wholly within Austria, to the south-west are the *Drava*, *Mur* and *Raab*

Resources Iron-ore of remarkable purity is worked in Styria, and **coal**, chiefly lignite, is mined near GRAZ Copper, zinc, lead and salt are also produced The **forests** in the alpine region yield large supplies of timber, which is an important export, and agriculture is carried on extensively in the Danube valley **Wheat, rye, barley, potatoes** and **sugar-beet** are grown, but the foodstuffs produced do not suffice for the population

Trade The leading *exports* are timber, ores, chemicals, furniture and paper goods, the chief *imports* are grain and coal A large trade is done by rail with Czechoslovakia and Germany, and much by river-steamers on the Danube

Towns. VIENNA (*Wien*, with suburbs 1841), the capital, on the Danube, has a famous Exchange, cotton, silk and woollen factories, breweries, and wine trade from the neighbouring vineyards It is particularly famous for artistic work in wood, leather and mother-of pearl, for drugs, perfumery and chocolate GRAZ (157) is the centre of the Styrian iron trade

HUNGARY (*Magyar Ország*)

The new **Hungary**, about one-third the size of the old Kingdom of Hungary, is confined to the plain of the middle *Danube* inhabited almost entirely by Magyars It is above all an agricultural country, the *pusztas*, which resemble the Russian steppes, pasture herds of **horses, cattle** and **sheep**, and when cultivated yield heavy wheat crops **Vine**-culture and wine making are important industries **Beet** for sugar, and **tobacco** are also grown Hungary has no minerals except **coal** mined at PÉCS and **lignite** found in the Bakony Forest, north-west of Lake Balaton

The double town of BUDAPEST (1184) on the Danube is the capital, doing a large grain, cattle and wine trade, and containing flour-mills grinding the wheat of the plains Carriage-building, jute-spinning, and distilling are also important industries SZEGED (110), on the Tisa, is also an industrial town **Horse** and **cattle** trading occupies most attention in DEBRECZEN (103).

CZECHOSLOVAKIA (*Československá Republika*)

Czechoslovakia is a new Republic composed of the Czech territories *Bohemia, Moravia* and *Silesia* of former Austria and the Slovak territory of former Hungary, with the addition of *Ruthenia* The country is largely mountainous, *Bohemia* is a plateau with a mountain rim, which divides it from Germany, *Slovakia* contains the massif of the *High Tatra*, and the *Carpathians* form the boundary with Poland The **climate** depends greatly on the configuration of the land, it is most severe in the Bohemian highlands and the mountains of Slovakia

Resources The State possesses a variety of mineral wealth, which includes **coal** and **iron**, mined chiefly in Silesia, the Erzgebirge (Ore Mountains) and the High Tatra **Gold, silver, radium, antimony, graphite, copper** and **lead** are produced Bohemia has rich deposits of clay, kaolin and sand, used locally in the manufacture of pottery, porcelain and glass One-third of the country is covered with forests which yield much valuable timber **Agriculture** is carried on in the valleys of the Elbe and Morava and on the fertile plains along the

southern border, where in addition to rye, oats, barley and wheat, large quantities of sugar-beet and hops are grown

Trade Owing to its inland position the Republic has to rely largely upon the internationalized Elbe, Oder and Danube as highways of commerce Among the goods exported down the Elbe are lignite, sugar, corn, timber, fruit and glass, the river-steamers returning with artificial manure, iron and cotton The Oder is used chiefly for bringing iron-ore from Sweden Austria, Germany and France take the bulk of the exports, while Germany and the United States send most of the imports

Towns. PRAHA (*Prague*, 676), the capital, on the Elbe, is the centre of Bohemian industry, in direct communication with the port of Hamburg It is also connected by rail with the great brewing town of PLZEN (*Pilsen*, 88) and numerous towns which produce **coal** and **textiles, machinery, hardware** and **glass** goods BRNO (*Brunn*, 221) is the centre of the woollen industry BRATISLAVA (*Pressburg*, 93) is a great market for the farm products of the neighbouring plain and port on the Danube OPAVA (*Troppau*, 35) has sugar factories and is the centre of Silesian trade

POLAND (*Rzeczpospolita Polska*)

The Republic of **Poland** lies between Germany and Russia and embraces the basin of the *Vistula*, the main stream forming an important natural highway through the centre from the Carpathians on the southern border to the Baltic The country is mainly lowland and possesses large areas of agricultural land, highly cultivated in the west, where cereals, chiefly **rye, potatoes** and **sugar-beet** are grown In the south-west **coal, iron, zinc** and **lead** are found, and KONIGSHUTTE and DOMBROVO are mining centres At WIELICZKA, near CRACOW (182), there are immense **salt** mines, and **petroleum** is found in abundance at many points along the foot of the Carpathians, the principal wells being at DROHOBYCZ and BORYSLAW to the south of LWÓW (*Lemberg*, 219) WARSAW (931), the capital, on the *Vistula*, is a manufacturing centre and LODZ (451), on the Silesian coal-field, is the chief **cotton**-spinning town VILNA (214) is an industrial town on the railway between WARSAW and Leningrad (Petrograd) in Russia

Poland's only seaport is the **Free City of Danzig**, through which Polish imports and exports are passed free of duty

RUSSIA (*Rossiya*)

The former **Russian Empire**, as a result of the revolution of 1917, has been broken up into many independent Republics Some, including the *Ukraine*, *White Russia*, *Armenia*, *Georgia*, *Azerbaijan Daghestan* and *Turkistan*, which have adopted the Soviet form of government are federated with the Central Government of Moscow and are treated here as still part of the Russian Republic Others namely Finland, Estonia, Latvia, Lithuania and Poland, which have received recognition as separate states, are described under the headings Baltic States and Poland

Extent and Configuration. Russia occupies the whole of Eastern Europe from north to south, and the whole of Northern Asia from west to east, over a continuous extent of $8\frac{1}{2}$ million square miles of continent In the north it forms one vast **plain**, swelling up to the Ural Mountains in longitude 60° E where Europe meets Asia All European Russia is flat, but in Asiatic Russia the southern part of the plain rises in the *Altai* and other **mountains** to form the buttress of the lofty Asiatic plateau, whence great rivers flow northward

Rivers There are about 50,000 miles of navigable rivers in European Russia, and about 500 miles of **canals**, which carry an immense traffic during the open season The system of the *Neva* and *Volga* normally carries two-thirds of the total European river trade It includes Lakes *Onega* and *Ladoga* (the southern shores of which are skirted by canals to enable barges to avoid the rough water of the lakes) with access to the Baltic, the river *Dvina* entering the White Sea, and the *Volga*, with long navigable tributaries from east and west, flowing into the Caspian, and at TSARITSIN coming within 50 miles of the *Don*, to which barges are transferred by railway and floated down to the Black Sea Another system links the Baltic through the *Vistula* in Poland and *Dnieper* with the Black Sea and Mediterranean In Asiatic Russia there is a vast system of north-flowing rivers, including the Ob, Yenisei and Lena, fed by east or west flowing tributaries which carry some traffic in summer and autumn but are closed by ice for half the year There are about 45,000 miles of railway, including one across the whole breadth of Asia, and 120,000 miles of telegraph line

The climate is purely continental, all the rivers and nearly all the seaports are frozen in winter, most of them for from 4 to 6 months, and in summer the heat is intense, while the rainfall is slight over almost the entire empire

Mineral Resources The chief **coal**-fields are in the centre around TULA to the south of MOSCOW, where the production is small, and in the south between the rivers *Donets* and *Don* near the Sea of Azov, where the best coal is obtained, and, before the War, 16 million tons were annually raised, the whole production of the country then being over 23 million The Ural mountains contain some coal, and mines where **iron, gold, zinc, silver,** and **platinum** are produced in great abundance The province of *Ekaterinoslav* near the Donets coal-field normally yields nearly half of the whole Russian output of iron Copper, lead, gold, and graphite are obtained in various parts of Asiatic Russia, especially in the Altai mountains There are **rock-salt** mines in several places, and salt-works amongst the saline lakes of the Steppes The western shore of the Caspian is pierced by very productive **petroleum** wells, yielding 5 million tons in 1922

Agriculture In the far north of European Russia the frozen plains or *tundras* bear a scant covering of moss during the short summer, these are succeeded by a wide belt of pine forests, followed farther south by forests of **beech** and **oak**, forming the greatest wood-covered area in Europe The woods are under Government control, and in those round the upper reaches of the great rivers all cutting is forbidden In clearings of the forests rye, oats, flax, and hemp are grown South of the woodlands is the most fertile region of Russia, a treeless plain stretching from the Dniester to the Urals south of 55°, and called the Land of the *Black Earth*, growing **wheat, rye,** and in the south-west **maize** South of all, the *Steppes* extend to the Black Sea and the Caspian The Steppes are snow-covered in winter, and barren plains of dust in summer, but in spring and autumn they are clothed with grass on which **horses, cattle,** and **sheep** are pastured The woods are crowded with **fur**-bearing animals, such as the squirrel, and the great rivers swarm with fish

The **trade** of Russia before the War was mainly with Germany and the United Kingdom, and the *exports*, which exceeded the imports in value, were mainly grain (averaging 50 per cent of the whole), chiefly **wheat** from the Black Sea, **oats** and **rye** from the Baltic ports, **timber, flax,** and **hemp**, together with **cattle** and animal products and **petroleum.** The *imports* were raw materials for the then prosperous manufactures, **coal, tea,** and manufactured articles The commercial policy was that of **protection**, the average duties levied on imports being 35 per cent of the value of the goods For instance, coal paid 8*s* per ton at Black Sea ports where it could compete with Russian coal, but only 2*s* at Baltic ports where native coal is difficult to obtain Siberian rivers on the Arctic Sea can be reached by steamers in summer, ice makes the navigation dangerous, but goods were admitted there duty-free to encourage trade The **government** was an absolute

monarchy, but after the military revolution in 1917 it became a Socialist Federal Soviet Republic The people belong to many races, speaking many languages, and although usually docile are not as a rule enterprising The Soviet government has adopted the metric system of weights and measures The pre-war standard coin was the silver *rouble* (worth nominally *2s 2d*)

Towns The principal seaport on the Baltic is LENINGRAD (PETROGRAD) (1900), the capital, reached by a ship-canal from the great naval station of KRONSTADT on an island in the Gulf of Finland, which was its port until 1885. Revel (Estonia) and Riga (Latvia) often remain free from ice all winter and are never blocked so long as the Neva, so that they carried on much of the trade of LENINGRAD in winter. Their staple exports are oats, rye, wood, hemp, flax and tallow ARCHANGEL, on the White Sea, exported flax, especially to the United States, timber, tar, and tallow The chief Black Sea harbours are TAGANROG (70) at the mouth of the Don on the Sea of Azov, KHERSON (70) on the Dnieper, NIKOLAEV (95) and ODESSA (480) The last was the busiest port, received grain for export from inland centres and did a great trade in tea and other Asiatic products, it is rarely blocked by ice SEVASTOPOL (now a naval harbour closed to trade), NOVOROSSISK, and BATUM are never frozen The staple export from all except the eastern seaports was the **wheat** of the *Black Earth* region MOSCOW (1480) was the first manufacturing town for textiles, metal-work and paper, and is the chief centre of internal trade TULA (135) and KALUGA have coal-mines and extensive ironworks NIJNINOVGOROD (100) on the Volga was visited by hundreds of thousands of merchants with goods of all kinds brought by rail, river, and caravan from Europe and Asia at the great yearly fair in July Further down the Volga, the industrial towns of KAZAN (180) and SARATOV (200), with tobacco and salt-works, had a large shipping trade From PERM on the *Kama*, a tributary of the Volga, a railway crosses the Urals to the mining centre EKATERINBURG ASTRAKHAN (150) on the Caspian Sea has **sturgeon** fisheries and trade with BAKU and Persia ORENBURG on the Ural river is the centre of a gold mining district.

KHARKOV (220), on the northern border of the Steppes, with large **horse** trade, and KIEV (470), on the Dnieper in the north of the Black Earth region, with beet-sugar works, held important **fairs** TIFLIS (180), south of the Caucasus Mountains, and midway on the railway between the oil town of BAKU (210) on the Caspian and its port BATUM on the Black Sea, has **silk** manufactures

TASHKENT (200) in Turkistan is the chief town of Central Asia, and is reached by the railway from ORENBURG, or by the Trans-Caspian railway from KRASNOVODSK *viâ* SAMARKAND In this region the growing of cotton by means of artificial irrigation was carried on with success A great railway nearly 5000 miles long has been built across southern Siberia to IRKUTSK on Lake Baikal and along the Amur valley, turning south through Manchuria to Port Arthur on the Yellow Sea, with a branch to VLADIVOSTOK This line carries the overland trade from China, formerly conducted by camel caravans, and it was serving to develop the country by providing an outlet for the produce of the mines and fields Formerly camel transport on this route cost £120 per ton from KYAKHTA to ORENBURG

BALKAN STATES

The **Balkan Peninsula** is rugged and mountainous, and terminates in an archipelago which separates the Ægean Sea from the Mediterranean The river valleys although fertile are narrow, with the exception of that of the Danube, which forms a wide plain bounded by the Carpathians to the north, and the Balkans to the south North of the Balkans the **climate** is of the severe continental type, to the south it is warmer, and favourable for the growth of fruit and roses **Agriculture** on the plain and in the valleys, and rearing livestock, are the chief industries, the mineral resources being scarcely touched

The **Danube** is an international highway From its mouth in the Black Sea to Braila it is under the control of a Commission at Galatz, on which Great Britain, France, Italy and România are represented, and is kept open for ocean-steamers by engineering works at the *Sulina mouth*, the other two outlets on its wide delta not being accessible to large ships The river is, as a rule, closed to sea-trade by ice during January and February

ROMÂNIA, by the Treaties which followed the Great War, has more than doubled her pre-war area. She now

includes within her borders, in the east, Bessarabia, an extension of the old Românian plain, in the west across the Carpathians, the Transylvanian plateau and part of the Hungarian plain, and in the north Bukovina The country between the Danube and the Carpathians belongs to the Black Earth region and is mainly agricultural, producing enormous quantities of **maize** and **wheat** for export, along with barley and oats Transylvania yields **fruits, maize, flax** and **tobacco. Cattle** and **sheep** are raised in large numbers, and **horse**-breeding is important **Petroleum**, obtained chiefly in the Prahova district is the most important mineral, and **salt**, which is a government monopoly, ranks next Other minerals are **coal, iron, copper** and **gold** from the mines in the Aranyos valley, the most productive in Europe Before the War most of the exports went to Germany and Belgium, and the imports, chiefly manufactured goods, came from Great Britain, Austria and Germany BUCHAREST (309), the capital, is the chief trade centre CHISINAU (*Kishinev,* 114) is the Bessarabian grain market and has tobacco factories GALATZ (73) and BRAILA (66) are Danube ports which export grain and timber CONSTANTSA (28), on the Black Sea, connected by rail with BUCHAREST, *viâ* the Cernavoda bridge across the Danube, exports petroleum.

YUGOSLAVIA. The Serb, Croat and Slovene State, more commonly known as Yugoslavia, was formed by the union of the old kingdoms of Serbia and Montenegro with the Austro-Serbian, Croatian and Slovene parts of former Austria-Hungary The country, which occupies the north-west portion of the Balkan Peninsula, is predominantly agricultural **Maize** and **wheat** are the principal cereals, grown most extensively on the plains drained by the Danube and the Sava, and in the fertile valleys of the larger rivers of old Serbia The main root crops are **sugar-beet** and **potatoes. Plums** and other fruits are widely cultivated, and there are vineyards and olive groves in the Dalmatian coastlands On the large areas of pastureland **cattle** and **sheep** are reared while the extensive beech and oak forests support herds of

swine. The mineral resources are not yet fully known, but coal is mined at various points, the state mine of SENJ, which yields about 200,000 tons annually, being the most productive Copper, iron and lead are also mined The foreign trade, which consists chiefly of exporting maize, cattle, prunes (dried plums) and timber is almost exclusively with Austria and Italy, and is carried on mainly in the capital, BELGRADE (120), at the junction of the Sava and Danube, whence railways radiate and give access to the ports of FIUME, in Italy, and Salonika, in Greece

BULGARIA, including Eastern Rumelia, lies south of România Iron and coal occur near VIDIN on the Danube and VARNA, a port on the Black Sea The growth and export of wheat and other grain, sheep-rearing and wool trade are the chief industries A railway, over which the Orient express runs through from Paris to Constantinople, by the valley of the Morava in Serbia, passes SOFIA (154), the capital, and descends along the Maritsa valley by PHILIPPOPOLIS (63), a commercial town manufacturing silk, cotton, tobacco, and otto of roses RUSCHUK is a Danube port The chief export trade is to Turkey, and most of the imports come from Italy

GREECE comprises the southern islands and peninsulas Minerals, especially iron, lead, silver and zinc, are worked to some extent, but the country is mainly agricultural, nearly half of the value of the exports being made up by currants, the dried fruit of a small vine Wheat and maize are grown in the plain of Thessaly, where LARISSA is an important town The warm climate allows grapes, olives, and many southern fruits, as well as cotton and tobacco, to mature Large flocks of sheep and half-wild goats are kept, but there are few cattle or pigs The Greeks are a seafaring and commercial people, and carry on most of the sea-trade in the eastern Mediterranean, the Greek race predominating in the islands of the archipelago ATHENS (293), with its famous harbour at PIRÆUS, is the only large town, and is joined to PATRAS, on the Gulf of Corinth, by a railway running across the Isthmus, which is now pierced by a ship-

canal SALONIKA (170) on the Ægean is an outlet for the silk-growing villages of the west and is in railway connection with Western Europe Navigation round the coast is dangerous and the lighthouse system is defective HERMOUPOLIS on the Isle of *Syra* is a coaling station for vessels entering the Black Sea

The **coinage** throughout the Balkan States is that of France, the franc being called a *drachma* in Greece, a *dinar* in Serbia, a *lei* in România and a *leva* in Bulgaria

TURKEY in Europe, to which the other Balkan States formerly belonged, is now reduced to an area of some 11,000 square miles round Constantinople The country produces **wheat, barley, maize, rye** and **oats,** mainly cultivated along the Ergene and Maritsa rivers CONSTANTINOPLE (1000) on the Golden Horn, with SCUTARI on the Asiatic side, commands the *Bosporus,* the narrow outlet of the Black Sea to the small Sea of Marmora It is a commercial city, dealing in and distributing foreign manufactured goods and collecting Turkish produce for export Of special importance is the trade in cereals which come by the Anatolian railway to HAIDAR PASHA, opium largely from AFIUN KARAHISSAR, and mohair from the ANGORA district It also does a large trade in tobacco and Turkey carpets Most of the trade is with Great Britain ADRIANOPLE (80), on the navigable Maritsa, is a market for the crops of the neighbourhood and contains carpet factories and distilleries of otto of roses

Asiatic Turkey comprises the whole of Asia Minor The chief harbour is SMYRNA (350), accessible by the largest steamers, and connected by rail with the interior It has a large export trade in **wool, valonia, opium, fruit,** including raisins, and dates, **sponges** and **cotton.** BRUSA (110) in the middle of the best tobacco, cotton, and silk-growing region, and ANGORA in the highland home of the mohair goat, are commercial centres, the latter connected by rail with Scutari. ERZERUM (80) on the plateau of *Armenia,* is a trading town on the caravan route from the East

CHAPTER XVII

SOUTHERN EUROPE

Switzerland Towns of Switzerland *Italy* Resources, Trade, Towns of Italy Italian Colonies in Africa *The Iberian peninsula* Spain. Towns of Spain Portugal Portuguese Colonies.

SWITZERLAND (*Schweiz, Suisse*), shut in among the Alps between Italy, Austria, Germany, and France, is an agricultural and industrial republic Most of the inhabitants speak German, the rest French or Italian The **population** is dense on the comparatively level table-land near the Lakes of Geneva and Constance, where there are industrial towns (using electrical energy generated by water power), but is very thin in the Alpine valleys, where **cattle**-rearing and the making of **cheese** and condensed **milk** are the chief occupations The fine **scenery** and climate attract thousands of **tourists**, and lovers of winter sports, who spend several million pounds a year in the country and employ many hotel-servants and guides Silk and cotton textiles, clocks and watches, are the chief manufactures and *exports* Grain and raw materials are the leading *imports*

Towns of Switzerland. ZURICH (207), an important railway centre, is the largest town with most of the **textile** industry and transit trade BASEL (*Bâle*, 136), on the Rhine, weaving **silk**, especially ribbons, WINTERTHUR with engineering works, ST GALLEN with cotton-spinning and embroidery factories, and SCHAFFHAUSEN, the head of river navigation on the Rhine, stand on the plateau in the north-east GENEVA (*Genf*, 135), on the French frontier, is the centre of the **watch** and **clock**-making which is carried on in the surrounding villages LAUSANNE, NEUCHATEL (*Neuenburg*) and LA CHAUX DE FONDS are important trade towns in the west with railway transit to France

ITALY (*Italia*)

The **Italian peninsula** is cut off from central Europe on the north by the vast barrier of the **Alps**, at the base of which lies the **plain** of Lombardy, shut in on the south by the **Apennine** range running down the centre of the peninsula The **climate** of all Mediterranean countries is warm and dry, but subject to occasional bitterly cold blasts from

the snow-covered Alps (the *mistral*), and hot dry winds from the African deserts (the *sirocco*) The railway system leading to Italy is unique on account of the number of long tunnels, the most important lines are the *Mont Cenis* from France, the *Simplon* from Switzerland and France, the *St Gotthard* from Switzerland and Germany, and the *Brenner*, which crosses the Alps without a tunnel, from Austria and eastern Germany

Resources. The chief minerals of Italy are the **sulphur** of Sicily (quarter of the mineral wealth of the country) shipped at CATANIA (255) near Mount Etna, and the **marble** of CARRARA in the north-west of the peninsula Zinc (mined near CAGLIARI, Sardinia) comes next in importance, then **lead, iron, mercury** and **copper** Electrical energy from water-power is largely employed in industry The plain of Lombardy, watered from the rivers Po and Adige by a network of navigable canals, is densely peopled and fertile, raising **wheat** as a winter, and **maize** as a summer crop on the higher ground, with rice in the marshes The vine grows in all parts of the peninsula, and much ground is under **olives, hemp, flax,** and southern fruits, such as the orange, fig, and almond Chestnuts form a large part of the food of the people in the south Mulberry trees are grown for feeding silkworms The alpine slopes pasture **cattle,** and supply dairy produce, particularly **cheese,** for export There are sardine, oyster, and coral **fisheries** on the coast

Trade Silk, wine, and olive oil are the characteristic manufactures The preparation of **macaroni** from wheat-flour, sugar manufacture, and straw-plaiting, also employ many hands Silk amounts in value to one-third of the total *exports*, cotton tissues, hemp, wine, and automobiles come next The chief *imports* are grain, raw material for textiles, and coal, as Italy has only a few lignite beds Most of the trade is done with the United States, the United Kingdom, France and the Argentine The trade policy is protective, very heavy duties being charged on imports The coinage is like that of France, the franc being called a *lira*

Towns of Italy. MILAN (718), the junction for the St Gotthard railway, is second only to Lyons in silk-weaving, and TURIN (502), junction for the Mont Cenis tunnel, has similar trade PIACENZA, PARMA (58) and MODENA (82), both with **terra-cotta** works, and BOLOGNA (210), are centres for collecting and spinning **silk** on the railway along the south of the plain of Lombardy which leads to ANCONA (65), and BRINDISI, where the British mails for India and Australia coming by one of the alpine tunnels are shipped Another line from MILAN, along the northern border of the plain, passes near BERGAMO (a famous raw-silk market, to which the peasants of the surrounding villages bring the

cocoons they rear at home), through BRESCIA (96), with iron and steel works, VERONA (80), the junction for the Brenner line, PADUA (112) with silk-mills, and crosses by a bridge 1 mile long to VENICE (171), which is built on 120 islets in the Adriatic, and was once the chief commercial city in the world GENOA (300) in the north-west is now the first Italian harbour, especially for foreign trade, its growth has been very rapid since the opening of the alpine tunnels, which enabled it to compete favourably with Marseilles LEGHORN (*Livorno,* 115), farther south, ships the best olive oil, and is the port of FLORENCE (*Firenze,* 253), the centre of art manufactures ROME (691), the capital, has little commercial importance, but NAPLES (780) comes second to GENOA PALERMO (400), with silk and cotton mills, MESSINA (177) and PORTO EMPEDOCLE are the chief ports of *Sicily,* exporting sulphur, wine, oranges and other fruit

The Italian colonies are **ERITREA** on the Red Sea, with the hot seaport of MASSAWA, where pearl-fishing and trade in palm nuts is carried on, **ITALIAN SOMALILAND,** on the east coast of Africa, exports maize, gum, hides and cotton, and **LIBYA** (*Tripoli* and *Cyrenaica*) does an important trade in ostrich feathers, which are exported to Paris and London

SPAIN and PORTUGAL

The Iberian peninsula, shut off from France by the *Pyrenees,* is well situated for external trade, steep coasts with natural harbours facing the Mediterranean and Atlantic It is a high table-land, ridged by mountain-ranges, with five chief rivers, *Ebro, Guadalquivir, Guadiana, Tagus,* and *Douro* These flow as a rule through narrow valleys, which widen into extensive plains in the south-west There are great deposits of fine iron-ore in the north, lead, copper, mercury, and zinc in the south, and coal, not yet much worked, in several places

SPAIN (*España*) occupies most of the peninsula Although mining and industries are rapidly developing, **agriculture** is the mainstay of the people The most fertile regions are the southern *huertas* or gardens (watered by canals made by the Moors centuries since) and the plains of *Andalusia,*

where cotton, rice, dates and sugar-cane grow **Wheat**, barley, rye and maize are the chief grain-crops, sufficing for home consumption, the **vine** is extensively cultivated, and the **cork**-oak, **olive** and all southern **fruits** abound **Silkworm** culture and the breeding of fine-wooled **merino sheep** and horses are important

Trade. **Wine** formerly made up half, but is now only one-seventh, of the value of the *exports*, the rest being mainly **metals**, ores, fruit, live-stock, and cork, the *imports* are chiefly raw cotton, colonial produce, and manufactured articles Most of the trade is with the United Kingdom and France, the United States and Germany coming next The **coinage** is like the French, the franc being called a *peseta*

Towns of Spain. MADRID (609), the capital, is the railway centre whence lines radiate through the valleys to the seaports BARCELONA (582) in the north-east, is the first industrial town and second harbour, receiving one-third of the imports of the country, and connected by rail with VALENCIA (236), another port with silk-mills ALICANTE has export trade and factories CARTAGENA (102), in the south-east, exports **lead** from the mines near MURCIA (124), a town in the midst of a silk-growing district ALMERIA ships lead and zinc ores, wines, raisins, and esparto, and MALAGA (136) has similar trade on a larger scale It contains cotton-mills and sugar-works, and is the port of the old industrial and commercial city of GRENADA (77) SEVILLE (150), on the Guadalquivir, which is navigable to the town, has various industries, and exports **mercury** from ALMADEN and lead from LINARES, brought down by rail through CÓRDOBA (66), an important trade centre JERES (62), near the mouth of the river, ships sherry at CADIZ (63), a fine harbour, but an unhealthy town, the trade of which is declining In the south-west the copper-works of the *Rio Tinto* and *Tharsis* companies have brought prosperity to the small port of HUELVA, whence ore and metal are shipped to Britain and America LA CORUÑA is an important trading town of the north-west, and BILBAO (99) on the Bay of Biscay ships **iron**-ore and has the largest foreign trade of any town in Spain

The **Canary Islands**, off the coast of Africa, and several

small areas on that continent, alone remain as Spanish colonies.

PORTUGAL occupies a strip of the Iberian peninsula in the south-west **Wine, cork,** fish, hides, olive oil and copper are almost the only exports, and most of the trade is done with the United Kingdom, France and Germany coming far behind Its resources are even less developed than those of Spain Agriculture and fisheries are the staple industries LISBON (*Lisboa,* 489), on the estuary of the Tagus, is the capital and chief port for foreign trade OPORTO (204), at the mouth of the Douro, farther north, weaves some textiles, but is chiefly engaged in the manufacture and export of **port-wine** SETUBAL (*St Ubes*), near LISBON, has a deep-sea fishery and salt-works No other town has a population greater than 25,000

The **colonies of Portugal** include the **AZORES, MADEIRA** (with its capital FUNCHAL, exporting wine, and flourishing as a winter resort and as a place of call for South African and South American steamers), and **CAPE VERDE ISLANDS,** in which ST VINCENT is a coaling station The islands of **S. Thomé** and **Principe,** in the Gulf of Guinea, export cocoa

A large part of Africa south of the equator has been in the possession of Portugal for 400 years **ANGOLA,** including the provinces of Congo, Loanda, Lunda, Huilla, Luanza (North and South), Moxico, Cubango, Malanje, Benguella, and Mossamedes in West Africa, contains many thriving plantations, and railways have been constructed inland from LOANDA and LOBITO **Portuguese East Africa** includes the province of Moçambique (divided into six districts), the Companhia de Moçambique and the Companhia de Nyassa. The *Mozambique Company* administers the Manica and Sofala regions south of the Zambezi, in which BEIRA on a fine harbour at the mouth of the Pungwe river is the natural entrance to Southern Rhodesia with which it is connected by rail MOÇAMBIQUE has a considerable trade in forest produce British and Indian currency circulate freely in Portuguese East Africa QUELIMANE, at one mouth of the Zambezi, was important as a landing-place for Nyasaland

until the Chinde mouth was found to be navigable LOURENÇO MARQUES, on Delagoa Bay, one of the best harbours in East Africa, is the terminus of a railway to the Transvaal and affords the shortest route from the sea to the eastern gold-fields

In Asia the Portuguese retain **GOA** in India, **MACAO** in China, and half the island of **Timor** in the Malay Archipelago.

CHAPTER XVIII

THE COUNTRIES OF ASIA

Arabia Persia Afghanistan Siam China—Extent, People, Resources, Towns *Japan*—Configuration and Climate Resources People and Trade Towns *Chōsen*

THOSE countries under the control of European Powers have been already referred to, viz Siberia and Russian Central Asia under Russia, Asiatic Turkey under Turkey, and French Indo-China under France The Indian Empire and British Colonies in Asia are separately treated

ARABIA occupies most of the plateau between the Red Sea and the Persian Gulf It is a hot region of *sand deserts* dotted with *oases* on which **dates**, and the acacia tree yielding **gum arabic**, are cultivated The wandering Arabs rear **camels**, sheep, and the finest breed of **horses** in existence. MECCA, the holy city of the Mohammedans and capital of the Kingdom of **HEJAZ**, is approached as far as MEDINA by a railway from Damascus, built for the conveyance of pilgrims, and there is also a constant service of pilgrim steamers from all Mohammedan countries to its port, JIDDA, on the Red Sea HODEIDA, the capital of **YEMEN**, farther south on the Red Sea, exports coffee, grown on the slopes facing the sea, and dates In **Oman**, the port of MUSCAT on the Gulf of Oman is the only important town, but several villages of pearl-fishers and traders border the Persian Gulf

PERSIA, the largest and most western country of the *Iran* plateau, has the Caspian Sea on the north and the Persian Gulf on the south It was governed by an absolute monarch, the Shah, until 1906 when a National Council was established, and European methods of commerce are being adopted There used to be access from Europe through Tiflis in Russia, and from the Persian Gulf The country is traversed by several telegraph lines, but there are still few roads and only a beginning of railways The climate is dry, and much ingenuity is shown in the construction of irrigation works for agriculture The *exports* are **cotton**, dried **fruits**, **carpets**, rice, hides and skins, silk, and opium, the

imports cotton and other cloths, glass goods, sugar, and other articles of food Most of the trade passes through BUSHIRE, on the Persian Gulf, whence a railway runs part of the way to SHIRAZ, a town of rose-gardens, where otto of roses is made LINGEH and BANDAR ABBAS are also important ports, there are no *harbours*, on the Gulf TABRIZ (200) in the north is the chief commercial town and centre of caravan traffic from Trebizond on the Black Sea It is connected by rail with Tiflis TEHRAN (220), the capital, is a centre for caravans from all the frontier towns, and so is ISFAHAN (80), around which cotton and silk are produced Several small towns on the Caspian trade with Russian ports The commercial importance of Persia has been increased by opening the Karun river, which enters the Shatt-el-Arab, to foreign trade, by establishing a land trade-route to India, and by founding a State Bank British commercial interests in Persia exceed those of any other country and more than half the trade is with the British Empire

AFGHANISTAN, with its chief towns of HERAT near the Persian, KABUL near the Indian frontier, and KANDAHAR in the south, is important mainly as a "buffer state" between India and Russia, with both of which it does a small trade Access to KABUL is had by a good road through the Khyber Pass from Peshawar, and to KANDAHAR by road from New Chaman, the present terminus of the Sind-Pishin railway **Drugs**, especially castor-oil and asafœtida, and fruits are the chief commercial products

SIAM, between the Indian province of Burma and French Cochin China, with telegraph lines to both, produces **teak**-wood from its inland forests, **tin** and **wolfram** from the mines in the Malay Peninsula, **rice** on the flat marshy coast-lands, and plantation products Rubies and other gems are found in considerable quantities The country is politically influenced by France but commercially by China, which absorbs most of the external trade Railways are being built to open up the interior of the country and there is a through service between BANGKOK and Penang and Singapore Commercial activity is centred in the great city

of BANGKOK (541), literally *on* the river Menam, whole streets being composed of floating houses, and canals taking the place of roads on land Rice forms about three-quarters of the *exports*, teak, pepper and spices, cattle and edible birds' nests coming next in value

CHINA

Extent The Chinese Republic (Empire to 1912) occupies Eastern Asia, the densely-peopled district of *China proper* being next the sea The two chief rivers, the Yangtze-kiang and Hwang Ho or Yellow River, flow from the western mountains across great, flat and very fertile plains, which they frequently inundate, the course of the Yellow River often changing *Tibet*, bordering India beyond the Himalayas, *Sinkiang* (*Eastern Turkistan* and *Dzungaria*) to the north-west, the enormous territory of *Mongolia* (now a separate republic), bounded by Siberia in the north, occupying the vast plateau and terraces of Central Asia, are provinces differing somewhat in their relation to the republic, but all practically closed to commercial intercourse with the outer world by their position and policy *Manchuria* has been opened up by railways built by the Russians

The **people** of China proper are intensely laborious and industrious, they have been in a sense civilised for thousands of years, and are slow to adopt Western methods On account of the density of population many are always eager to emigrate, they ask very low wages, spend little money, and invariably return to China with their savings, in case of death abroad their bodies being sent home They are greatly disliked in newly-settled countries, and in many their landing is absolutely prohibited

The **resources** of the country are great, but only the **agriculture** has been fully developed In the north the Yellow River flows through vast deposits of a rich yellow earth, on which cotton, wheat, millet and leguminous plants are cultivated In the south, especially about the Canton river, rice, **tea**, and sugar grow, and the **silkworm** is reared on a very large scale **Opium poppies** are extensively cultivated in western China, although considerable progress has recently been made in the suppression of opium growing The **coal**-fields of China are more extensive than those of any other country, and have been worked on a small scale for many centuries The principal mines are those of KAIPING in the north The coal and iron mines worked in the neighbourhood of HANKOW (1468), the greatest tea-shipping

port on the Yangtze-kiang, are also important, and the development of the mines all over China is proceeding There are rich deposits of copper and tin (the most important mineral export) in Yunnan Antimony, of which China supplies more than half of the world's production, is obtained in Hunan The canal and road systems of China are extensive and complete, but, as a rule, badly maintained The rivers are still the main highways of commerce, but railways are extending in all directions and in 1922 there were about 9000 miles open to traffic Many towns beyond the railways are connected by telegraph lines Chinese industries are of merely national importance, the chief textile woven is silk, there are also manufactures of cotton, although immense quantities of cotton-cloth are imported The making of paper and of fine porcelain is important in a less degree, and all processes are carried on in the same way as in remote antiquity British vessels are admitted into numerous ports, by special treaties, and most of the external trade by far is with the United Kingdom and India, although the United States takes most of the tea The chief *exports* are silk and tea, and the principal *imports* cotton goods and opium The unit of coinage for international purposes is the *haikwan tael*, valued at 3*s* 11½*d* in 1921 A peculiar dialect called "pijin English" or "business English" is used in commercial transactions at the treaty ports

Towns. PEKING (924), the capital on the Peiho, is connected by rail with its seaport TIENTSIN (800), a treaty port near the mouth of the river, and thence with NEWCHWANG and through the Manchurian railway with Siberia and Europe. SHANGHAI (1500), near the mouth of the Yangtze-kiang, is the most important harbour and centralises the foreign trade, especially that in opium and silk It contains nearly half of the foreigners living in China HANKOW is in railway communication with PEKING ICHANG, 1000 miles from the sea, is the most remote port on the Yangtze-kiang to which steamers are allowed to ascend, though the river is navigable much higher Along the coast south of the Yangtze-kiang the chief treaty ports are NINGPO (271), FOOCHOW (320), one of the chief tea-exporting towns, and AMOY (300) CANTON (900), a manufacturing city and the oldest treaty port, with great exports of silk, stands on the Canton river, on which a large proportion of the inhabitants live in house-boats The river contains immense quantities of the **pearl-mussel.** The British colony of Hong-Kong, the small Portuguese colony of **Macao,** and the Japanese **Port Arthur** show the inroads of enlightened Powers

JAPAN

Configuration and Climate. The ancient empire of Japan occupies a chain of mountainous islands separated by the Sea of Japan from Korea and Asiatic Russia The latitude corresponds to Southern Europe, but the climate is on the whole colder and more severe, with hot summers in the south and cold winters in the north The deeply indented shores have many good harbours, and the position near a populous continent is remarkably advantageous for commercial intercourse Navigation in the Sea of Japan and along the east coast of Asia is made dangerous by the occurrence of sudden cyclonic storms known as *typhoons*, warnings are issued at most of the ports when the approach of such storms is expected.

Resources Copper, silver, iron, coal, and sulphur, all of which are worked and exported, are the chief mineral resources Although the low ground and valleys are of limited extent the soil when well manured produces rice, barley, rye, wheat, tea, sugar-cane, cotton, and tobacco abundantly There are great forests, and the lacquer tree, which yields a peculiarly fine varnish for ornamental woodwork, is a characteristic product of Japan The silkworm is largely cultivated, and there are extensive fisheries on the coast

People and Trade. Japan, a limited monarchy since 1889, has accepted the methods of Western civilisation in their entirety, and proved both in peace and in war its equality with the great Powers of Europe and America Efficiency is the characteristic of the Japanese in everything they undertake While the chief manufacturing industries are those producing silk goods, lacquered artwork, porcelain, and metals, new factories with the latest appliances have been established, under European or American guidance, but are now entirely managed by Japanese **Railway** and **telegraph** lines connect the principal places in the larger islands External commerce is encouraged, and most ports are open for foreign trading vessels The chief *exports* are raw silk (which amounts to one-third), manufactured silk, cotton yarn, coal, copper, rice, matches, tea, and fish, and the principal *imports* are raw cotton, cotton and woollen goods, sugar, metals, and petroleum The chief trade is with the United States and China for exports, the United States for imports, then India and the United Kingdom At the open ports English is the commercial language The **currency** is based on a gold standard, the *yen* being worth a fraction over 2*s* and divided into 100 *sen*

Towns. Yedo Bay on the east coast of *Honshu*, the central and largest island, contains YOKOHAMA[1] (423), the chief port and residence of European merchants, with steamer-lines to Vancouver, San Francisco, Australia, India, and to Europe by the Suez Canal A railway runs to the capital, the industrial and commercial city of TOKYO[1] (2173), on the same bay OSAKA (1253) and HYOGO (*Kobe*, 608), both open ports in the south, are outlets for the manufactures of KYOTO (591), the ancient capital and chief industrial town, where the manufacture of silk fabrics and art-work is centred The foreign trade of HYOGO is extremely flourishing A railway along the east coast connects those towns with YOKOHAMA NIIGATA on the west coast is a treaty port accessible only in summer on account of heavy surf The southernmost island *Kyushu* contains the open port of NAGASAKI (176), one of the best and most picturesque harbours in Japan *Hokkaido* in the north has two important seaports, HAKODATE on the south and SAPPORO on the west The island of *Formosa*, with the seaport and coal-mines of KEELUNG, was taken from China after the war in 1895 PORT ARTHUR and part of *Sakhalin* (Karafuto) were taken from Russia in 1905

CHŌSEN (*Korea*), which occupies the peninsula between the Yellow Sea and the Sea of Japan, is now part of the Japanese Empire Gen-seng, a root used as a drug, is a characteristic export There are twelve treaty ports, of which JINSEN (*Chemulpo*) is the chief, as it is the harbour of KEIJO (*Seoul*, 250), the capital, with which it is connected by rail.

[1] Destroyed by earthquake and fire in 1923

CHAPTER XIX

THE COUNTRIES OF AFRICA

Egypt—Resources Towns Suez Canal *Anglo-Egyptian Sudan Abyssinia North Africa Morocco Tropical Africa* Sudan Liberia

Africa is less open to commerce than any other continent This arises from its unindented coast-line, with few harbours, from the configuration of the country—a vast table-land descending abruptly to the sea-shore—causing cataracts and rapids on all the great rivers (none of which, except the Nile, and Niger-Benue, is navigable from the sea for any distance), and from the extremely hot climate which prevails everywhere except in the south The inhabitants belong to many races, and as a rule are uncivilised On account of the absence of roads or railways, and the fact that cattle cannot live in some districts, internal traffic in Central Africa still depends on negro carriers The extremely cumbrous money system—cloth, brass wire, beads, and cowrie shells—further increases the difficulty of trading Arabs with camel caravans, or gangs of negroes, carry on most of the internal trade of northern and eastern Africa, but as slaves form the most valuable commodity their success means depopulation, and is fatal to the future value of Africa as a market for European manufactures Africa is, however, so largely divided amongst European countries, as colonies or protectorates, that the independent states are now few, and are gradually sharing in the general advance and development

EGYPT, in the north-east, is an independent Kingdom ruled by a *Sultan*.

Resources The wide flat delta and narrow valley of the **Nile** support a dense population on account of the fertile soil left after the annual flooding of the river, which begins to rise in June, and reaches its highest point in October Here **cotton, maize, wheat,** rice, beans, lentils and sugar-cane are the chief objects of cultivation, and the land is watered by a system of irrigation canals A great dam or barrage is built across the Nile below CAIRO, by which the level of the river above may be raised 10 feet and the irrigation canals of the delta continuously supplied in the dry season A still greater work is the huge dam across the Nile at ASWAN, by which since 1903 a vast storage reservoir is formed in the river, and irrigation of the valley is maintained throughout the year If the rainfall should be deficient on the mountains of Abyssinia to the south, the Nile fails to overflow and the Egyptian harvest is a failure, as the climate of the fertile valley and plain is hot and extremely dry The only cultivated land of any importance away from the river is in the province of Fayum, where a system of artificial irrigation is possible Much is being done to increase the productions of the land by additional engineering works for irrigation In every sense of the

word the Nile makes Egypt On both sides of the Nile valley stretch vast deserts with a few oases yielding dates, and peopled by nomad tribes The chief *exports* of Egypt are **cotton, beans,** and grain, the principal *imports,* manufactured cotton and clothing, wood, and coal, most of the **trade** is with the United Kingdom (which accounts for nearly one-half), then the United States and France The unit of coinage is the piastre, worth $2\frac{1}{2}d$, 100 of which form the "Pound Egyptian" equivalent to £1 0s 6*d* There is a network of railways over Lower Egypt, and a line runs up the Nile valley to KHARTOUM

Towns of Egypt. ALEXANDRIA (444), at the west end of the delta, is the chief trade port and has fine docks, ROSETTA and DAMIETTA are harbours at the mouths of other branches of the Nile, and all three are connected by rail and river with CAIRO (791) at the head of the delta, which is the capital and chief commercial city

Suez Canal PORT SAID at the east end of the delta is the Mediterranean terminus of the Suez Canal, which is 87 miles long, including 21 miles of lakes, and crosses the isthmus to SUEZ on the Red Sea It is a wide straight cut, without locks, and can be traversed by the largest vessels afloat, traffic is kept up at night by means of the electric light The Canal is managed by a French company and is an **international highway** between Europe and the far East, but in 1921 more than 2300 British vessels, with a tonnage of over 11 millions, passed through out of a total of 3900 vessels of all nations, with a gross tonnage of 18 millions

The ANGLO-EGYPTIAN SUDAN is a vast territory, with an area of nearly a million square miles, including most of the valley of the Blue Nile and all that of the White Nile between Egypt and Uganda It is under British administration with the approval of the Egyptian government The Egyptian railway reaches KHARTOUM at the junction of the Blue and White Niles, 1250 miles from Cairo, and a railway has been constructed across the desert from the Nile near BERBER to a new port on the Red Sea north of SUAKIN The largest town is OMDURMAN opposite KHARTOUM The country is recovering from the oppressive rule of the dervishes It exports considerable quantities of **gum** and **india-rubber,** and large areas are available for growing cotton and grain

ABYSSINIA or *Ethiopia,* an ancient Christian empire, occupies the mountainous country in which the Atbara and the Blue Nile rise It is separated from the sea by the Italian

colony of Eritrea and French Somaliland, but a railway from Jibuti in the latter territory runs to the capital, ADDIS ABABA Abyssinia has not yet acquired any great commercial importance, and its mineral wealth, forest produce, and agriculture still remain undeveloped and largely unknown

North Africa The northern part of Africa consists of the great *Sahara* sand desert, bordered on the Mediterranean by the Italian dependency Libya and the fertile Barbary States, Tunisia and Algeria, under French control, and Morocco in the west The despotic and turbulent empire of **MOROCCO** is now practically a protectorate of France FEZ (70), the northern capital, manufactures leather and cloth caps MARRAKESH (140), the southern capital, has caravan communication eastward through TAFILET, on a date-growing oasis, and southward to Timbuktu in the French sphere on the Niger, the intervening country yields ivory, gold-dust, ostrich feathers, and dates The chief ports are TANGIER, opposite Gibraltar, and MOGADOR, on the Atlantic coast, west of MARRAKESH The chief exports are **grain, hides, cattle, eggs, wool,** and dried fruit The country is rich in minerals, but these have never been utilised

Tropical Africa A number of populous Mohammedan Negro kingdoms occupy the fertile region of the **Sudan** east of Lake Chad and south of the Sahara Those in the west have been placed in the French sphere of influence, and those in the east in the British, but the natives have not been consulted The attempts to open the Sudan to trade have hitherto had small success The **east coast** of Africa has already been described, as it is occupied entirely by the possessions of European countries The **west coast** also is occupied by a string of British, French, and Portuguese colonies, which have been referred to before, but here there is an independent state under civilised government

The republic of **LIBERIA**, between Sierra Leone and the Gold Coast, with its capital MONROVIA, was founded by liberated American slaves Its exports, like those of all West Africa, are palm-oil, earth-nuts, india-rubber, coffee, and ivory

CHAPTER XX

THE COUNTRIES OF AMERICA

Mexico—Resources, Towns, Coinage *Central America*—Guatemala Salvador Honduras Nicaragua Costa Rica Panama *West Indies*—Haiti Santo Domingo Cuba *South America*—Configuration and Climate Venezuela Brazil, Resources, Towns Paraguay Uruguay The Argentine Republic. Chile Peru Bolivia Ecuador Colombia

THE great settlements of the Anglo-Saxon race in North America have been described, the remaining countries are very different in their degree of development They are all republics with admirable constitutions on paper, but in few is there any political stability or real enterprise in industry or commerce The people are either of Spanish or Portuguese descent or half-breeds with native "Indians" or negroes, although many emigrants from Italy and France and some from Northern Europe have made their home in the continent Several South American boundaries are still uncertain The development of all the countries as regards railways and industries of every kind is dependant on foreign capital, mainly British

MEXICO

The Republic of Mexico occupies a high plateau in the south of North America Population is densest in the south, which has a cool climate, due to altitude, and alternate dry and wet seasons The land slopes down through a temperate belt to hot coast strips bordering the Gulf of Mexico on the east and the Gulf of California and Pacific Ocean on the west.

Resources. The chief resources are mineral, petroleum and the precious metals, especially silver, form about one-half of the total exports The products of the forest include mahogany and many valuable dye-woods, gums, and spices The plants of temperate countries, including maize (the chief food of the people), barley, wheat, and beans, are cultivated on the table-land, and on the hot slopes and coast strips sugar-cane, coffee, cocoa, cotton, and tobacco are grown The agave, or American aloe, is a characteristic cultivated plant, one species yielding an alcoholic liquor, and others, grown mainly in Yucatan, fibres which form an important export under the names of *henequen* and *sisal hemp* Cattle are reared on the ranches

in the north and usually driven across the border into the United States for sale Industries are developing, but most manufactured articles are still imported Three-quarters of the trade is with the United States Petroleum is the chief export to the United Kingdom The other exports are, in order, silver and its ores, gold, henequen fibre, copper, coffee, hides and skins, and forest produce The import duties are very heavy, often exceeding the value of the goods on which they are levied

Towns. MEXICO (1080), the chief town and capital, situated on the plateau near rich silver-mines, has railways to VERA CRUZ, on the Gulf of Mexico, the chief seaport of the country, to GUADALAJARA (120) in the west, and to most of the larger towns in the north on the way to the various junctions with the United States railways

Coinage In Mexico and most of the Spanish-speaking republics the unit of coinage is the silver dollar or *peso* (known in some of the states by different names), nominally worth 4*s*, but really about 2*s* The metric system is legal, but the old Spanish weights, the *libra* (a little over 1 lb), the *arroba* (25⅓ lb) and *quintal* (101½ lb), are largely used

CENTRAL AMERICA AND WEST INDIES

Central America, a mountainous isthmus, separating the Caribbean Sea from the Pacific, narrows and becomes lower at its junction with South America A line of active volcanoes runs through it, and continues southward along the Andes **Earthquakes** are so common everywhere on the Pacific coast as to affect commercial relations, towns being sometimes destroyed and harbour works either entirely submerged or raised high and dry The resources have not been developed, and although the political condition of the small Spanish-speaking republics is uncertain and revolutions frequent, their trade is of growing importance, most of it is with the United States and the United Kingdom

GUATEMALA adjoins Mexico and British Honduras; **SALVADOR** and **HONDURAS**, the latter with the seaport of TRUXILLO on the Caribbean Sea, lie to the south-east; **NICARAGUA**, containing a large lake, comes next and would have acquired great importance if the scheme of deepening the San Juan river which flows from the lake into the Atlantic had been carried out and a ship-canal cut between the lake and the Pacific, then comes **COSTA RICA**, with

its harbour PUNTARENAS on the Pacific **PANAMA** is the most important of these republics on account of the great canal between COLON on the Caribbean Sea and PANAMA on the Pacific, two active seaports connected also by a railway 47 miles long The territory within five miles of the canal on each side, known as the Canal Zone, has been ceded to the United States, which built the canal and are responsible for maintaining it All these republics export **coffee, hides, sugar,** and **fruit**, Honduras and Nicaragua also produce **mahogany** and **india-rubber**, **indigo** is cultivated for export in Salvador

The **West Indies,** belonging mainly to the British Empire, the United States, and France, mark off the Caribbean Sea from the Atlantic, and these have been already treated The central island contains two republics, **HAITI,** peopled by French-speaking negroes, with the fine harbour of PORT-AU-PRINCE to the west, and **SANTO DOMINGO** (*Dominica*) to the east The products are **coffee, cocoa, sugar,** mahogany, logwood and cotton, and the trade is principally with the United States and the United Kingdom Both republics are far behind in the development of their resources

CUBA, the largest of the West Indian islands, is a Spanish-speaking republic, in close relations with the United States The value of the island lies chiefly in its **tobacco** plantations, tobacco and cigars, exported mainly through HAVANA (360), accounting for one-quarter of the total exports. **Sugar** is of even greater importance commercially, as it accounts for more than one-half of the value of the exports The island has mineral resources, including copper, manganese and iron, not yet largely exploited It has a good railway system and is now rapidly developing Most of the trade is with the United States, only a little falling to the share of the United Kingdom

SOUTH AMERICA

Configuration and Climate The chain of the Andes, running from north to south very near the western coast, presents a steep front to the Pacific and a short steep slope eastward, succeeded by a long gradual slope toward the Atlantic The Atlantic slope is divided, by

the plateau of Guiana in the north and the mountains of Brazil in the east, into the basins of three great river systems, the *Orinoco*, *Amazon*, and streams entering the *La Plata* estuary The climate is more oceanic than that of any other continent In the north the south-east trades deluge the wooded Amazon plains with rain, but the Andes entirely protect the western slope, producing a region of rainless *deserts* In the south the "roaring forties" cause a heavy rainfall on the western slopes, and the wind is nearly dry when crossing the grassy plains of the east, which only receive slight showers

The Republic of **VENEZUELA** in the north-east includes the great river Orinoco, and its grassy steppe-like plains (*llanos*), devoted to **cattle**-raising It is bounded on the east by British Guiana Its mineral resources, are considerable, including gold and petroleum **Agriculture** is the only important industry, **coffee, cocoa, sugar,** and **maize** being cultivated The chief exports are coffee, cocoa, india-rubber, hides, and gold, and most trade is done with the United States, the United Kingdom, Spain and France CARACAS (87), the capital, is the chief market for **cocoa**, which is shipped at its harbour of LA GUAIRA, connected by rail, on the Caribbean Sea VALENCIA (54), the second town in importance, is a **coffee** centre and has a sea outlet at PUERTO CABELLO MARACAIBO, on a deep bay in the west, the chief port for exporting coffee

BRAZIL

The United States of Brazil contain about half the area and one-third of the population of South America It was the last country in South America to uphold slavery, which was abolished in 1888, and the latest to become a republic

Railways run inland from the chief seaports, but transport in the interior is still by mules A telegraph cable connects BAHIA with Lisbon, and most of the chief towns are joined by wires The unit of **coinage** is the gold *milreis*, worth about 2*s* 3*d*, but the money in use is almost exclusively a depreciated paper currency, together with nickel and bronze coins of small denominations The official **language** is Portuguese, while that of all the other Central and South American republics is Spanish, but there are settlements of Germans and Italians, speaking their own language, in the southern provinces, which are temperate Export as well as import duties (the latter averaging 45 per cent *ad valorem* on British goods) are charged on most commodities

Resources The characteristic but not the most profitable mineral of Brazil is the **diamond**, mined at DIAMANTINA in the state of *Minas Geraes*, **gold** is obtained at OURO PRETO in the same state, iron and other ores lie ready to be worked Successful **coal**-mines have been opened in the southern cattle-rearing states of *Rio Grande do Sul* and *Santa Catharina* **Monozite**, used in the manufacture of gas mantles and similar incandescent materials, is found in the states of *Bahia* and *Espirito Santo*, which produce the greater part of the world's supply The dense tropical **forests** of the *selvas* covering the vast plain of the Amazon yield woods in great variety, **india-rubber**, gums, resins, wild fruits, drugs, and spices, but they are not adequately utilised Brazil is mainly a land of **plantations**, which are cultivated by a large negro and half-breed population **Coffee** is the staple production, reaching a maximum in the eastern states, the quality is not the very best, but the quantity is equal to that raised in all other parts of the world The **sugar-cane**, **cocoa**, **tobacco**, **cotton**, and manioc are extensively grown, and **Paraguay tea** is also prepared Attempts have been made with some success to introduce ordinary tea from China The principal exports are **coffee** (worth one-half of the whole) and **india-rubber**, then come **hides**, **Paraguay tea**, **cocoa**, **tobacco**, and **cotton** The United States take one-third of the exports while the United Kingdom sends one-third of the imports (manufactured cotton, coal, and machinery)

Towns of Brazil. RIO DE JANEIRO (1000), the capital, on a fine bay, is the first commercial and manufacturing town in South America and the chief export-harbour for coffee Railways run to OURO PRETO and other mining towns in the adjacent state of *Minas Geraes*, and to SÃO PAULO (450), the railway centre of a large coffee-growing district, the produce being shipped at SANTOS In the south PORTO ALLEGRO (150) and PELOTAS, with railways to the German settlements, export cattle, tallow and hides. BAHIA (*São Salvador*, 350) exports tobacco, cocoa, cotton, coffee, sugar and rum PERNAMBUCO (*Recife*, 216) has similar trade, and both are calling places for the regular steamers from Europe—especially continental ports—to the capital PARA, at the mouth of the Amazon on the equator, is the only good harbour on the swampy north coast, and exports the india-rubber and other forest produce collected by the river-steamers which navigate the Amazon

The little inland republic **PARAGUAY**, capital ASUNCION (102) on the navigable Paraguay, has excellent grazing lands which are being used for cattle-raising **Tobacco** is

largely grown and shipped mainly to Europe The chief exports are hides, timber, tobacco, oranges and **yerba maté** or *Paraguay tea*, the powdered leaves of a shrub, an infusion of which is drunk in all parts of South America

URUGUAY is small, but well situated for commerce, lying between the Argentine Republic, Brazil, and the La Plata estuary, which although shallow and full of shifting sand-banks is of vast commercial importance **Cattle** and **sheep** breeding is the main industry, and the *exports* of wool, hides, fresh meat, meat extract, live-stock, tallow, and bones, are sent chiefly to the United States, the United Kingdom, France, Italy and Spain, while the imports are mainly brought from the United States, Argentine, the United Kingdom and Brazil MONTEVIDEO (361) on the Plate, with railways to the interior, does the whole external trade of the country and has immense ranges of slaughter-houses (*saladeros*) The departments of *Salto* and *Paysandu* are the chief cattle-breeding districts, and the whole number of cattle slaughtered in the country every year exceeds 800,000

The **ARGENTINE REPUBLIC** occupies the whole of the southern extremity of South America from the Atlantic to the Andes, including the vast treeless plains or *pampas* of the Parana and the shingle-deserts of Patagonia

The main **resources** are the rich pasture lands which support millions of half-wild **cattle** and **horses** under the charge of herdsmen known as *gauchos*, who are famous for their horsemanship and their skill in capturing the beasts with the lasso In the number of **sheep** it is only rivalled by Australia **Agriculture** is extending, especially in the north-east, where large areas are tilled for wheat, maize, and flax Cotton, sugar, tobacco and vines are also cultivated The principal *exports* are hides, meat, and other animal products (including **wool** sent almost exclusively to the continent of Europe and the United States), wheat, maize, and flax, the chief *imports* are textile fabrics and manufactures of iron and other metals The United States, the United Kingdom and Brazil send most of the imports, the United Kingdom, the United States and France receive the greater part of the exports The Argentine Republic is being rapidly developed, it attracts many emigrants from Southern Europe, especially Italians, and there are large Jewish settlements Its **railway** system is extensive, lines radiating from BUENOS AIRES in all

directions, one runs north-west to the borders of Bolivia, another westward right across the continent, which affords communication by a tunnel under a pass in the Andes with Valparaiso on the Pacific, and a third southward to BAHIA BLANCA whence a line runs inland toward the Andes to Neuquen

BUENOS AIRES (1720) contains more than 270,000 foreigners engaged in trade, it has enormous slaughter-houses and is the most active commercial town on the La Plata estuary with nearly the whole export and import trade of the country Its harbour has been improved, but some of its shipping trade is still done at LA PLATA (151) BAHIA BLANCA, on the bay of the same name, is the best natural harbour in the Republic, it exports large quantities of wheat and wool ROSARIO (265) and CORDOBA (156), stations on the North-Western railway, are important commercial towns MENDOZA is a centre for vine-growing.

CHILE, on the Pacific slope of the Andes, although rarely exceeding 100 miles in breadth, runs along the entire southern half of the continent, having annexed by conquest large portions of the adjacent republics

Nitrate of soda and guano are mined in the rainless deserts and islands of the north and shipped at IQUIQUE and PISAGUA in *Tarapaca* There are silver-mines south of this region around COPIAPO with railways to the little harbour of CALDERA Copper is abundant in the central provinces just north of VALPARAISO Coal is worked further south and shipped at CORONEL and LOTA The extreme south has a wet, inclement climate, but the middle portion is singularly fertile, growing vines, wheat, and barley Nearly four-fifths of the value of the *exports* are made up by minerals, chiefly nitrate of soda (*Chile saltpetre*), copper, silver, and coal, then follow animal products, barley, and wheat The external trade is chiefly with the United States and the United Kingdom The people of Chile are enterprising and rapidly developing their resources, the government is firmer and more settled than that of most South American republics There are numerous railways, chiefly short lines branching inland up the mountains from the seaports, and a central north-to-south line which is connecting up all these, the trans-continental line from VALPARAISO to the Argentine Republic, that from ANTOFAGASTA to La Paz in Bolivia, and that along the coast southward to the coal districts of *Concepcion*, are among the most important

SANTIAGO (507), the capital, and its port VALPARAISO (182), are the chief towns, the latter is the busiest harbour on the west coast and receives most of the imports,

but IQUIQUE and PISAGUA send out most of the exports VALDIVIA in the south contains a great many German settlers

PERU, north of Chile, is of less commercial importance on account of long and unsuccessful wars, involving the loss of territory Its chief productions are **silver, copper** and **gold** in the high mountain plateaus, guano is nearly worked out and the nitrate-producing province of *Tarapaca* now belongs to Chile **Petroleum** is worked mainly for home use, and sugar, cotton, vines, tobacco and maize are raised chiefly by Chinese labour on the borders of the short Pacific streams; coffee, **cinchona** (Peruvian bark), cocoa, coca and other forest produce are cultivated or collected on the eastern slope of the Andes **India-rubber** is collected in large quantities and shipped down the Amazon from IQUITOS The chief exports are now sugar, cotton, copper, petroleum and wool The **llama**, typical of the Andes countries, and the **mule** are the common beasts of burden; sheep and alpacas are kept for their wool LIMA (176) is the capital and trade centre, with a railway running through it from its port CALLAO (53), and up the Andes to OROYA, whence the line branches northwards to the silver and copper mines of CERRO DE PASCO, 14,000 feet above the sea, the highest town in the world From the southern port of MOLLENDO a second "railway in the clouds" crosses a pass 15,000 feet high to PUNO, on the great plateau-lake *Titicaca*, and from JULIACA near the shore of the lake a branch runs down the valley of one of the tributaries of the Amazon to CUZCO.

BOLIVIA, on the widest part of the high Andes plateau, is entirely shut off from the sea, and its resources are very slightly developed Most of its external trade, which is with the United Kingdom, passes through the ports of Arica and Antofagasta in Chile, both of which are connected by rail with LA PAZ, some by rail from Lake Titicaca to Mollendo, and a considerable amount by the Argentine North-Western railway to Buenos Aires The chief towns are LA PAZ (107), with a railway westward to Lake Titicaca, ORURO, the **silver** and **tin**-mining centre, and SUCRE the capital The mineral wealth of the country, including nearly all known

metals, is found in the western mountainous region which contains the famous silver-mines of **Potosi** and HUANCHACA, these are connected by branch lines with the La Paz-Antofagasta railway The eastern slope, watered by the tributaries of the Amazon, yields cinchona, the stimulating coca leaves, cocoa, and india-rubber, all in inexhaustible quantity The chief exports are **tin**, of which Bolivia produces one-quarter of the world's output, rubber, and silver

ECUADOR lies north of Peru and has similar resources The staple product is cocoa, cultivated in the western lowlands, where sugar, tobacco, coffee, and cotton are also grown, while the extensive forests yield india-rubber, cinchona bark, vegetable ivory and the fibre from which Panama hats are made The manufacture of straw hats is an important industry The principal exports are **cocoa** (worth one-half of the whole), vegetable ivory, Panama hats, india-rubber and coffee QUITO (80), the capital, being situated at an elevation of over 9000 feet, has a mild and pleasant climate although nearly on the equator. It is connected by rail with the chief port, GUAYAQUIL (100), a fine harbour on the Pacific, trading chiefly with the United Kingdom and France, but the trade of the country is paralysed on account of the lack of transportation facilities

COLOMBIA occupies the north-western corner of South America Coffee, cocoa, sugar, tobacco and bananas are successfully grown and largely exported, while vegetable ivory and india-rubber are of some importance The grassy plains of the north-west support large herds of cattle and sheep, and there is a considerable export trade in animals and hides The country is rich in minerals, petroleum is abundant; gold, silver and platinum are worked and exported, and its emerald mines are very valuable Colombia lost much of its commercial importance when its former province of Panama became an independent republic in 1903 BOGOTA (160), the capital, stands high up in the Eastern Cordillera, but the chief commercial town, BARRANQUILLA (64) on the Magdalena, is 20 miles by rail from PUERTO COLOMBIA, its harbour on the Caribbean Sea

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